FRACARRO

149 UNITED KINGDOM Catalogue TV and Satellite Solutions 2011

Products for the distribution of audio, video and data signals

- Aerials
- Electronic mast and indoor equipment
- Headends
- CATV systems and fibre optic solutions
- Multiswitches
- Distribution components

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Fracarro Group

The Company

Established in 1933, Fracarro is today one of the most important companies in Europe in the field of reception and distribution of audio video data signals and active security.
The synergy between the two sectors enables Fracarro to propose integrated solutions for the creation of intelligent buildings and dwellings to connect and interact actively worldwide.
Our aim is to guarantee the supply of high quality products with particular care to all connected services dedicated to the operators within that sector.

Today the company is able to guarantee a comprehensive catalogue of systems in the sector of audio, video and data for the reception and distribution of AVD signals: terrestrial and satellite antennas, amplifiers, mixers, power supplies, headends and distribution components.
With the introduction of DTT and having extensive experience in foreign markets, Fracarro is considered a reference point for solutions relating to the introduction of new technology.

Fracarro is an International group with the parent company in Italy

Fracarro **Italy**
Fracarro **Engineering**
Fracarro **France**
Fracarro **Iberica**
Fracarro **Polska**
Fracarro **Portugal**
Fracarro **Tunisie**
Fracarro **UK**

ISO 9001 Certification

Fracarro Quality System has being recognised with ISO9001 certification.

European Directives conformity

Fracarro's products are compliant, if applicable, to the following European Directives:

- 2006/95/EC (LVD - Low voltage directive)
- 2004/108/EC (EMC - Electromagnetic compatibility directive)

As they exceeded tests specified in the technical harmonized standards, carried out by leading accredited laboratories.
Such products are identified by the CE marking.

Warranty

Thanks to the quality and technological reliability of its products, Fracarro has decided to extend its guarantee from 2 to 4 years

The guarantee has been extended from 2 to 4 years for all terrestrial antennas, electronic mast and indoor devices, multiband amplifiers, headends, CATV and fibre optic systems, multiswitches, distribution components and Penta satellite dishes.

Technical Assistance

Fracarro provides technical assistance to solve any installation problem in the fastest way.

The service is available in each Fracarro company, with specialised staff ready to provide information to define projects.

Training

Fracarro has always been at the forefront in providing information to operators about available technology and is committed to giving training initiatives during exhibitions and road shows, working closely with clients and partners.

As well as providing backup material and in depth information, Fracarro has developed FRDesigner, a software system which enables you to easily design a complete system for the reception and distribution of audio-video-data signals.

TV standards

Analogue TV Standard

Country	VHF	UHF	Colour system
Algeria	**B**	**H**	PAL
Argentina	**N**	**N**	PAL
Australia	**B**	**H**	PAL
Austria	**B**	**G**	PAL
Bahrain	**B**	**G**	PAL
Belgium	**B**	**H**	PAL
Bulgaria	**D**	**K**	SECAM
China	**D**	**K**	PAL
Cyprus	**B**	**G**	PAL
Corea (Rep.)	**M**	**–**	NTSC
Croatia	**B**	**G**	PAL
Denmark	**B**	**G**	PAL
Egypt	**B**	**G,H**	SECAM
Finland	**B**	**G**	PAL
France	**E/L**	**L**	SECAM
Germany	**B**	**G**	PAL
Gibraltar	**B**	**H**	PAL
Great Britain	**I**	**I**	PAL
Greece	**B**	**G**	PAL
Holland	**B**	**G**	PAL
Hong Kong	**(A) I**	**I**	PAL
Hungary	**D**	**K**	SECAM
India	**B**	**–**	PAL
Indonesia	**B**	**–**	PAL
Iran	**B**	**G**	SECAM
Iraq	**B**	**–**	SECAM
Ireland	**I**	**I**	PAL
Iceland	**B**	**G**	PAL
Israel	**B**	**G**	PAL
Italy	**B**	**G**	PAL
Japan	**M**	**M**	NTSC
Jordan	**B**	**G**	PAL
Kuwait	**B**	**G**	PAL
Lebanon	**B**	**G**	SECAM
Libya	**B**	**H**	PAL

Country	VHF	UHF	Colour system
Luxemburg	**C**	**L**	PAL/SECAM
Malta	**B**	**H**	PAL
Malaysia	**B**	**G**	PAL
Morocco	**B**	**H**	SECAM
Mexico	**M**	**M**	NTSC
Monaco	**E**	**L**	SECAM
Nigeria	**B**	**G**	PAL
Norway	**B**	**G**	PAL
Oman Sultanate	**B**	**G**	PAL
Pakistan	**B**	**–**	PAL
Philippines	**M**	**M**	NTSC
Poland	**D**	**K**	SECAM
Portugal	**B**	**G**	PAL
Qatar	**B**	**–**	PAL
Czech Rep.	**D**	**K**	PAL/SECAM
Romania	**D**	**K**	PAL
Russia	**D**	**K**	SECAM
Saudi Arabia	**B**	**G**	PAL/SECAM
Singapore	**B**	**G**	PAL
Sjriam Arab. Rep.	**B**	**H**	SECAM
Spain	**B**	**G**	PAL
Slovenia	**B**	**G**	PAL
Slovak Rep.	**D**	**K**	PAL/SECAM
Sri Lanka	**B/H**	**–**	PAL
South Africa	**I**	**I**	PAL
Sweden	**B**	**G**	PAL
Svizzera	**B**	**G**	PAL
Thailand	**B**	**R**	PAL
Tunisia	**B**	**G**	SECAM
Turkey	**B**	**G**	PAL
U.A.E.	**B**	**G**	PAL
U.S.A.	**M**	**M**	NTSC
Yemen P.D.R.	**B**	**–**	PAL
Serbia Montenegro	**B**	**G**	PAL

CCIR - Sandard	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**K**	**K1**	**L**	**M**	**N**
Number of lines	405	625	625	625	819	819	625	625	625	625	625	625	525	625
Channel bandwidth (MHz)	5	7	7	8	14	7	8	8	8	8	8	8	6	6
Video bandwidth (MHz)	3	5	5	6	10	5	5	5	5.5	6	6	6	4.2	4.2
Video-to-sound spacing (MHz)	-3.5	+5.5 (+5.742)	+5.5	+6.5	+11.15	+5.5	+5.5 (+5.742)	+5.5	+6	+6.5	+6.5	+6.5	+4.5	+4.5
Vestigial sideband (MHz)	0.75	0.75	0.75	0.75	2	0.75	0.75	1.25	1.25	0.75	1.25	1.25	0.75	0.75
Picture modulation	Pos.	Neg.	Pos.	Neg.	Pos.	Pos.	Neg.	Neg.	Neg.	Neg.	Neg.	Pos.	Neg.	Neg.
Sound modulation	AM	FM	AM	FM	AM	AM	FM	FM	FM	FM	FM	AM	FM	FM

Comparison Noise Figure and Signal-Noise Ratio

Noise figure	KTo dB	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
		4.8	5.4	6.0	6.5	7.0	7.4	7.8	8.1	8.4	8.7	9.0
Noise Voltage at 75 Ohm	dBµV	7.1	7.7	8.3	8.8	9.3	9.7	10.1	10.4	10.7	11.0	11.3

Standard PAL I Great Britain

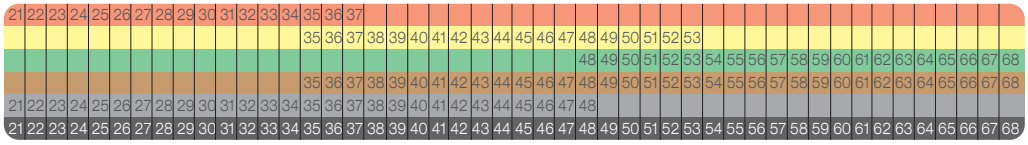
TV band		Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz	Analogue sound carrier MHz
VHF	III	I4	174-182	178	175.25	181.25
		I5	182-190	186	183.25	189.25
		I6	190-198	194	191.25	197.25
		I7	198-206	202	199.25	205.25
		I8	206-214	210	207.25	213.25
		I9	214-222	218	215.25	221.25
		I10	222-230	226	223.25	229.25
		I11	230-238	234	231.25	237.25
		I12	238-246	242	239.25	245.25
		I13	246-254	250	247.25	253.25
UHF	IV	C21	470-478	474	471.25	477.25
		C22	478-486	482	479.25	485.25
		C23	486-494	490	487.25	493.25
		C24	494-502	498	495.25	501.25
		C25	502-510	506	503.25	509.25
		C26	510-518	514	511.25	517.25
		C27	518-526	522	519.25	525.25
		C28	526-534	530	527.25	533.25
		C29	534-542	538	535.25	541.25
		C30	542-550	546	543.25	549.25
		C31	550-558	554	551.25	557.25
		C32	558-566	562	559.25	565.25
		C33	566-574	570	567.25	573.25
		C34	574-582	578	575.25	581.25
		C35	582-590	586	583.25	589.25
		C36	590-598	594	591.25	597.25
		C37	598-606	602	599.25	605.25
UHF	V	C38	606-614	610	607.25	613.25
		C39	614-622	618	615.25	621.25
UHF	V	C40	622-630	626	623.25	629.25
		C41	630-638	634	631.25	637.25
		C42	638-646	642	639.25	645.25
		C43	646-654	650	647.25	653.25
		C44	654-662	658	655.25	661.25
		C45	662-670	666	663.25	669.25
		C46	670-678	674	671.25	677.25
		C47	678-686	682	679.25	685.25
		C48	686-694	690	687.25	693.25
		C49	694-702	698	695.25	701.25
		C50	702-710	706	703.25	709.25
		C51	710-718	714	711.25	717.25
		C52	718-726	722	719.25	725.25
		C53	726-734	730	727.25	733.25
		C54	734-742	738	735.25	741.25
		C55	742-750	746	743.25	749.25
		C56	750-758	754	751.25	757.25
		C57	758-766	762	759.25	765.25
		C58	766-774	770	767.25	773.25
		C59	774-782	778	775.25	781.25
		C60	782-790	786	783.25	789.25
		C61	790-798	794	791.25	797.25
		C62	798-806	802	799.25	805.25
		C63	806-814	810	807.25	813.25
		C64	814-822	818	815.25	821.25
		C65	822-830	826	823.25	829.25
		C66	830-838	834	831.25	837.25
		C67	838-846	842	839.25	845.25
		C68	846-854	850	847.25	853.25
		C69	854-862	858	855.25	861.25

Cleared Spectrum after DSO (Source OFCOM Feb 2010)

Standard I Ireland

I	A-I	44.5-52.5	48.5	45.75	51.75
	B-I	52.5-60.5	56.5	53.75	59.75
	C-I	60.5-68.5	64.5	61.75	67.75
III	D-I	174-182	178	175.25	181.25
	E-I	182-190	186	183.25	189.25
III	F-I	190-198	194	191.25	197.25
	G-I	198-206	202	199.25	205.25
	H-I	206-214	210	207.25	213.25
	I-I	214-222	218	215.25	221.25
	J-I	222-230	226	223.25	229.25

Aerial Groups



Group A Group B Group C/D Group E Group K Group W

TV Standards

Standard B + G Europe

TV band		Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz	Analogue sound carrier MHz
VHF	I	E 2	47-54	50.5	48.25	53.75
		E 3	54-61	57.5	55.25	60.75
		E 4	61-68	64.5	62.25	67.75
	S	S 1	104-111	107.5	105.25	110.75
		S 2	111-118	114.5	112.25	117.75
		S 3	118-125	121.5	119.25	124.75
		S 4	125-132	128.5	126.25	131.75
		S 5	132-139	135.5	133.25	138.75
		S 6	139-146	142.5	140.25	145.75
		S 7	146-153	149.5	147.25	152.75
		S 8	153-160	156.5	154.25	159.75
		S 9	160-167	163.5	161.25	166.75
		S10	167-174	170.5	168.25	173.75
	III	E 5	174-181	177.5	175.25	180.75
		E 6	181-188	184.5	182.25	187.75
		E 7	188-195	191.5	189.25	194.75
		E 8	195-202	198.5	196.25	201.75
		E 9	202-209	205.5	203.25	208.75
		E10	209-216	212.5	210.25	215.75
		E11	216-223	219.5	217.25	222.75
		E12	223-230	226.5	224.25	229.75
	S	S11	230-237	233.5	231.25	236.75
		S12	237-244	240.5	238.25	243.75
		S13	244-251	247.5	245.25	250.75
		S14	251-258	254.5	252.25	257.75
		S15	258-265	261.5	259.25	264.75
		S16	265-272	268.5	266.25	271.75
		S17	272-279	275.5	273.25	278.75
		S18	279-286	282.5	280.25	285.75
		S19	286-293	289.5	287.25	292.75
		S20	293-300	296.5	294.25	299.75
	S	S21	302-310	306	303.25	308.75
		S22	310-318	314	311.25	316.75
		S23	318-326	322	319.25	324.75
		S24	326-334	330	327.25	332.75
		S25	334-342	338	335.25	340.75
		S26	342-350	346	343.25	348.75
		S27	350-358	354	351.25	356.75
		S28	358-366	362	359.25	364.75
		S29	366-374	370	367.25	372.75
		S30	374-382	378	375.25	380.75
		S31	382-390	386	383.25	388.75
		S32	390-398	394	391.25	396.75
		S33	398-406	402	399.25	404.75
		S34	406-414	410	407.25	412.75
		S35	414-422	418	415.25	420.75
		S36	422-430	426	423.25	428.75
		S37	430-438	434	431.25	436.75
		S38	438-446	442	439.25	444.75
		S39	446-454	450	447.25	452.75
		S40	454-462	458	455.25	460.75
		S41	462-470	466	463.25	468.75

TV band		Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz	Analogue sound carrier MHz
UHF	IV	E21	470-478	474	471.25	476.75
		E22	478-486	482	479.25	484.75
		E23	486-494	490	487.25	492.75
		E24	494-502	498	495.25	500.75
		E25	502-510	506	503.25	508.75
		E26	510-518	514	511.25	516.75
		E27	518-526	522	519.25	524.75
		E28	526-534	530	527.25	532.75
		E29	534-542	538	535.25	540.75
		E30	542-550	546	543.25	548.75
		E31	550-558	554	551.25	556.75
		E32	558-566	562	559.25	564.75
		E33	566-574	570	567.25	572.75
		E34	574-582	578	575.25	580.75
		E35	582-590	586	583.25	588.75
		E36	590-598	594	591.25	596.75
		E37	598-606	602	599.25	604.75
	V	E38	606-614	610	607.25	612.75
		E39	614-622	618	615.25	620.75
		E40	622-630	626	623.25	628.75
		E41	630-638	634	631.25	636.75
		E42	638-646	642	639.25	644.75
		E43	646-654	650	647.25	652.75
		E44	654-662	658	655.25	660.75
		E45	662-670	666	663.25	668.75
		E46	670-678	674	671.25	676.75
		E47	678-686	682	679.25	684.75
		E48	686-694	690	687.25	692.75
		E49	694-702	698	695.25	700.75
		E50	702-710	706	703.25	708.75
		E51	710-718	714	711.25	716.75
		E52	718-726	722	719.25	724.75
		E53	726-734	730	727.25	732.75
		E54	734-742	738	735.25	740.75
		E55	742-750	746	743.25	748.75
		E56	750-758	754	751.25	756.75
		E57	758-766	762	759.25	764.75
		E58	766-774	770	767.25	772.75
		E59	774-782	778	775.25	780.75
		E60	782-790	786	783.25	788.75
		E61	790-798	794	791.25	796.75
		E62	798-806	802	799.25	804.75
		E63	806-814	810	807.25	812.75
		E64	814-822	818	815.25	820.75
		E65	822-830	826	823.25	828.75
		E66	830-838	834	831.25	836.75
		E67	838-846	842	839.25	844.75
		E68	846-854	850	847.25	852.75
		E69	854-862	858	855.25	860.75

Standard B Italy

TV band	Channel	Channel frequency MHz	Analogue picture carrier MHz	Analogue sound carrier MHz
I	A	52.5-59.5	53.75	59.25
	B	61-68	62.25	67.75
II	C	81-88	82.25	87.75
III	D	174-181	175.25	180.75
	E	182.5-189.5	183.75	189.25
	F	191-198	192.25	197.75
	G	200-207	201.25	206.75
	H	209-216	210.25	215.75
	H_1	216-223	217.25	222.75
	H_2	223-230	224.25	229.75

Standard D Russia - OIRT

TV band	Channel	Channel frequency MHz	Analogue picture carrier MHz	Analogue sound carrier MHz
I	R 1	48.5-56.5	49.75	56.25
	R 2	58-66	59.25	65.75
	R 3	76-84	77.25	83.75
II	R 4	84-92	85.25	91.75
	R 5	92-100	93.25	99.75
III	R 6	174-182	175.25	181.75
	R 7	182-190	183.75	189.75
	R 8	190-198	191.25	197.75
	R 9	198-206	199.25	205.75
	R 10	206-214	207.25	213.75
	R 11	214-222	215.25	221.75
	R 12	222-230	223.25	229.75

Standard L France

TV band	Channel	Channel frequency MHz	Analogue picture carrier MHz	Analogue sound carrier MHz
III	L 05	174.75-182.75	176.00	182.50
	L 06	182.75-190.75	184.00	190.50
	L 07	190.75-198.75	192.00	198.50
	L 08	198.75-206.75	200.00	206.50
	L 09	206.75-214.75	208.00	214.50
	L 10	214.75-222.75	216.00	222.50

Standard K French overseas territories

TV band	Channel	Channel frequency MHz	Analogue picture carrier MHz	Analogue sound carrier MHz
III	K 4	174-182	175.25	181.75
	K 5	182-190	183.75	189.75
	K 6	190-198	191.25	197.75
	K 7	198-206	199.25	205.75
	K 8	206-214	207.25	213.75
	K 9	214-222	215.25	221.75

Digital Terrestrial Television

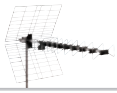
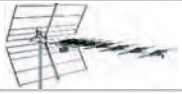
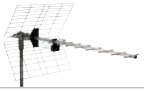
Digital Switchover Dates by TV Region

Border	**Complete July 2009**
West Country	**Complete September 2009**
Granada	**Complete December 2009**
Wales	**Complete March 2010**
West	**Complete April 2010**
STV North	**Complete May 2010**
STV Central	**Complete October 2010**
Channel Islands	**Complete November 2010**
Central	**March 2011**
Anglia	**March 2011**
Yorkshire	**August 2011**
Meridian	**2012**
London	**2012**
Tyne Tees	**2012**
UTV	**2012**

Aerial Benchmarking

For the reception of Digital Terrestrial Television (DTT) signals in the UK, aerials are required to be designed and manufactured to a minimum industry standard.
Due to the high level of analogue signals compared to the lower digital signals, the correct aerial is not always fitted. This mainly occurs in fringe reception areas where DTT reception issues have invariably been improved with the installation of the correct aerial.
The Confederation of Aerial Industries and the Digital Television Group have therefore decided that an approval process is required to ensure that aerials conform to a minimum standard.

The benchmark specification is used to determine the characteristics of an aerial required to obtain stable DTT reception. It does not alter the basic requirements of aerial design but highlights important parameters so that satisfactory DTT reception may be achieved.

Aerial benchmarked		
SIGMA 6HD	SIGMA 6HD, 6 element UHF Aerial **Certification Number: CAI/AB 116**	
BLU420F	BLU Series, 42 element UHF Aerial **Certification Number: CAI/AB 012**	
BLU220PLUS	BLU Series, 22 element UHF Aerial **Certification Number: CAI/AB 017**	
BLU420PLUS	BLU Series, 42 element UHF Aerial **Certification Number: CAI/AB 038**	
OMEGA5	Omega Series, 5 element UHF Aerial **Certification Number: CAI/AB 048**	
OMEGA8	Omega Series, 8 element UHF Aerial **Certification Number: CAI/AB 049**	
LP4F	Log periodic, UHF aerial **Certification Number: CAI/AB 130**	
LP45NF	Log periodic, UHF Aerial **Certification Number: CAI/AB 102**	
TAU11/45	TAU Series, 11 element UHF Aerial **Certification Number: CAI/AB 101**	

Aerials

The experience and technological expertise in manufacturing, acquired over 75 years in business, make Fracarro the market leader in designing and producing terrestrial and satellite antennas.

A complete range of Fracarro antennas are available which are unique in their performance and quality. They are made with excellent electrical characteristics, are a robust design and finished to a high standard.

Aerials

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Aerials

The aerial patterns represent measurements made in the horizontal plane at the center of the band.

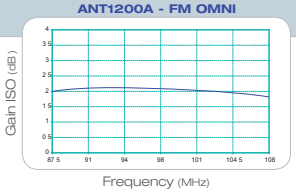
FM & DAB aerials

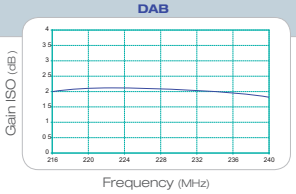
FM & DAB Series

FM & DAB aerials in different designs for the reception of FM radio signals to be used for MATV, SMATV and IRS installations.

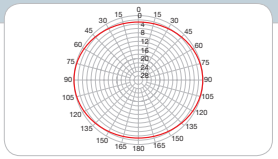
Item Code		ANT1200A 213001	FM OMNI 213009	DAB 213010
Elements	No.	1	1	1
Channels		FM	FM	DAB
Bandwidth	MHz	87.5-108	87.5-108	216-240
Maximum gain	dBi	2.1	2.1	2.1
Front-to-back ratio	dB	Omni	Omni	Omni
Return loss	dB	-16	<-6	-16
Beamwidth (-3dB)	°	360	360	360
Wind load at 120Km/h (720N/m2)	Kg (N)	3 (29.43)	2.7 (26.46)	2 (19.62)
Connector	Type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions	cm	96x77 (H x L)	63x10.5 (L x W)	59x8 (H x L)
Packaging				
Quantity	Pcs	10	10	8
Unit weight	Kg	0.9	0.84	0.54
Total weight	Kg	10.6	8.6	4.4
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		N/A		
Auxiliary boom		N/A		

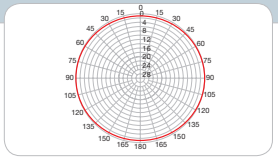
Gain





Pattern





VHF aerials

Band III wideband

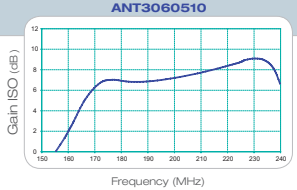
ANT3060510 ANT3100510

Pre-assembled Yagi band III wideband aerials with F connector.

Item Code		ANT3060510 213004	ANT3100510 213007
Elements	No.	6	10
Band		III	III
Channels		E5-E12	E5-E12
Bandwidth	MHz	174-230	174-230
Maximum gain	dBi	9	12
Front-to-back ratio	dB	25	28
Return loss	dB	-15	-16
Beamwidth (-3dB)	°	+/-26	+/-21
Wind load at 120Km/h (720N/m2)	Kg (N)	3.8 (37.24)	6.9 (67.62)
Connector	Type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	119x86	237x86
Packaging			
Quantity	Pcs	10	10
Unit weight	Kg	1.2	1.9
Total weight	Kg	12	19
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		MEC3603G - MEC3603Z	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		MEC3603G - MEC3603Z	
Auxiliary boom		CA2	Included

Gain

ANT3060510



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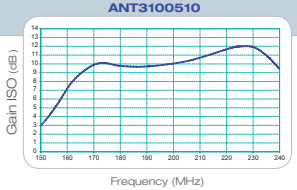
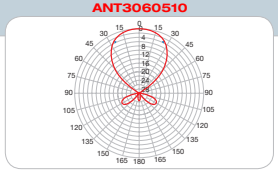


Pattern

ANT3060510



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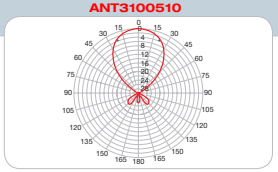
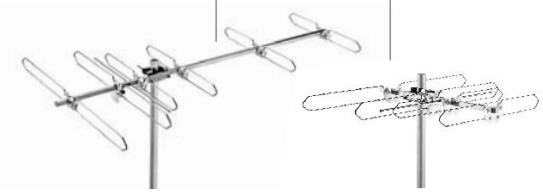


Aerials

VHF aerials

High performance band III wideband

BLV6F BLV4F

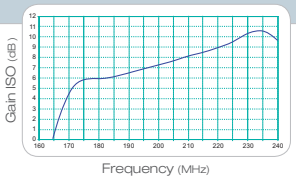


High quality pre-assembled aerials with a patent protected design and aesthetic innovations.
Important characteristics include: high gain, optimised impedance matching and excellent directivity.
Superior electrical and mechanical qualities, due to magnesium - aluminium alloy construction, guaranteeing long life.

Item Code		BLV4F 218038	BLV6F 218058
Elements	No.	4	6
Band		III	III
Channels		E5-E12	E5-E12
Bandwidth	MHz	174-230	174-230
Maximum gain	dBi	10.5	13
Front-to-back ratio	dB	20	24
Return loss	dB	-23	-22
Beamwidth (-3dB)	°	+/- 31	+/- 24
Wind load at 120Km/h (720N/m2)	Kg (N)	3.0 (29.43)	4.5 (44.14)
Connector	Type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	64x87	149x87
Packaging			
Quantity	Pcs	10	3
Unit weight	Kg	1.23	2
Total weight	Kg	14.5	6
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Polarisation vertical		PV10	
Polarisation vertical with tilt adj.		PV10	
Auxiliary boom		N/A	

Gain

BLV4F



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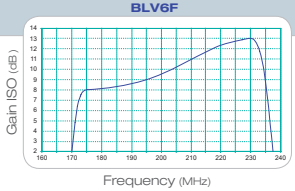
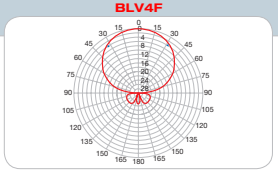
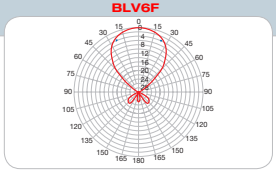


Pattern

BLV4F



BLV6F



VHF aerials

SIGMA Series

New

New aerial for the reception of the VHF band, with an exclusive design (patented by Fracarro). The SIGMA V2 HD aerial is equipped with circular director elements and with a 2 element reflector that enables high electrical performances to be obtained, while maintaining a compact length.
Sigma aerials are completely pre-assembled and therefore they can be installed quickly and easily without any other tools.

SIGMA V2 HD

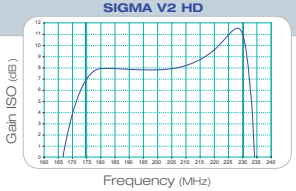
76cm length

To mount elements

Item Code		SIGMA V2 HD 213203
Elements	No.	2
Band		VHF
Channels		
Bandwidth	MHz	174-230
Maximum gain	dBi	11.5
Front-to-back ratio	dB	>25
Return loss	dB	-12
Beamwidth (-3dB)	°	+/-25
Wind load at 120Km/h (720N/m2)	Kg (N)	10 (98)
Connector	Type	F
Impedance	Ohm	75
Maximum mast Ø	mm	60
Dimensions (L x W)	cm	76x100.4
Packaging		
Quantity	Pcs	1
Unit weight	Kg	2.76
Total weight	Kg	2.76
Accessories		
Horizontal polarisation		Included
Horizontal polarisation with tilt adj.		Included
Polarisation vertical		Included
Polarisation vertical with tilt adj.		Included
Auxiliary boom		N/A

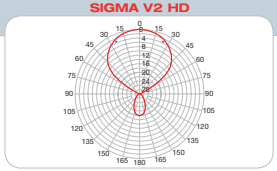
Gain

SIGMA V2 HD



Pattern

SIGMA V2 HD



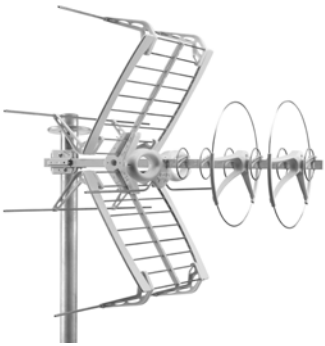
Aerials

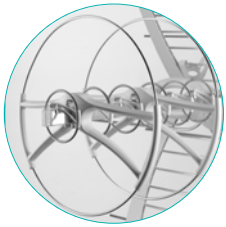
VHF + UHF aerials

SIGMA Series

Wideband loop Yagi aerial with F connector. The revolutionary loop Yagi technology applied to this aerial enables the reception of both VHF and UHF bands with a unique aerial, guaranteeing the same performances of two separate aerials. Sigma aerials can be installed quickly and easily without any other tools.

SIGMA COMBO HD





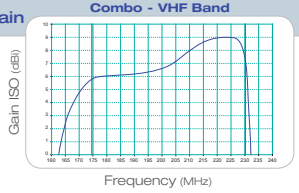
Element detail

Item Code		SIGMA COMBO HD 213202	
		VHF	UHF
Elements	No.	2	6
Band		VHF	UHF
Channels		E5-E12	E21–E69
Bandwidth	MHz	174-230	470-862
Maximum gain	dBi	9	16
Front-to-back ratio	dB	20	32
Return loss	dB	14	18
Beamwidth (-3dB)	°	±20	±25
Wind load at 120Km/h (720N/m2)	Kg (N)	26 (256)	
Connector	Type	F	
Impedance	Ohm	75	
Maximum mast Ø	mm	60	
Dimensions (L x W)	cm	108x100	
Packaging			
Quantity	Pcs	6	
Unit weight	Kg	3.83	
Total weight	Kg	27	
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		Included	
Auxiliary boom		N/A	

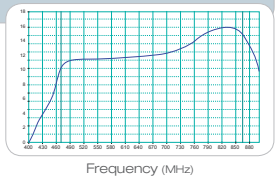
Also available Kit Combo HD (K711076) composed of: 1 x SIGMA COMBO HD, 1 x MAP115IB, 1 x PSU411

Gain

Combo - VHF Band

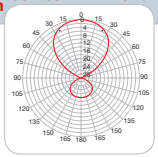


Combo - UHF Band

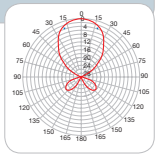


Pattern

Combo - VHF Band



Combo - UHF Band



UHF aerials

SIGMA Series

Wideband loop Yagi aerial with F connector. The original design, patented by Fracarro, enables a particular directivity (with the maximum reduction in interference) and maximum gain comparable with an aerial twice its length. Sigma aerials are completely pre-assembled, director elements, mast connection, reflector support and radiator saddle. Therefore, they can be installed quickly and easily without any other tools.

SIGMA 6HD

Standard 2

Reflector fixing

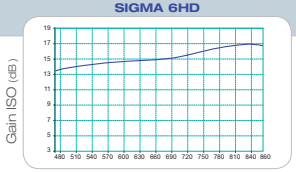
Reflector clamp and cover connector

Item Code		SIGMA 6HD 213201
Elements	No.	6
Band		UHF
Channels		E21 – E69
Bandwidth	MHz	470 – 862
Maximum gain	dBi	17
Front-to-back ratio	dB	32
Return loss	dB	-18
Beamwidth (-3dB)	°	±18
Wind load at 120Km/h (720N/m2)	Kg (N)	23 (225.4)
Connector	Type	F
Impedance	Ohm	75
Maximum mast Ø	mm	60
Dimensions (L x W)	cm	92x63
Packaging		
Quantity	Pcs	4
Unit weight	Kg	2.8
Total weight	Kg	11.2
Accessories		
Horizontal polarisation		Included
Horizontal polarisation with tilt adj.		Included
Vertical polarisation		Included
Vertical polarisation with tilt adj.		Included
Auxiliary boom		N/A

* For more information see www.dtg.org.uk website.

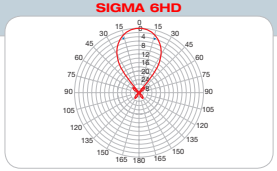
Gain

SIGMA 6HD



Pattern

SIGMA 6HD



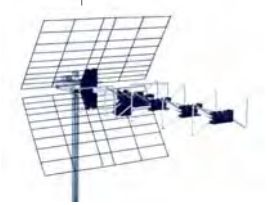
Also available active dipole UHF-UHF band for SIGMA Series aerials: SIGMA PWR HD - code 213204

Aerials

UHF aerials

BLU Series

BLU220F

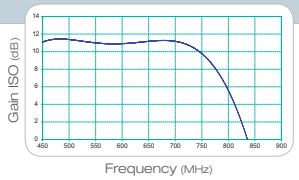


Pre-assembled aerials with F connector and excellent performance: high gain, high directivity and very good return loss. Easy to install and characterised by a highly reliable RF connection. 60mm maximum mast clamp diameter and the design allows good wind loading.

Item Code		BLU224F 217851	BLU225F 217852	BLU220F 217850
Elements	No.	22	22	22
Band		IV	V	UHF
Channels		E21–E37	E38–E69	E21–E69
Bandwidth	MHz	470–606	606-862	470-862
Maximum gain	dBi	11	13	13
Front-to-back ratio	dB	27	30	30
Return loss	dB	-20	-17	-16
Beamwidth (-3dB)	°	+/-25	+/-25	+/-25
Wind load at 120Km/h (720N/m2)	Kg (N)	5.5 (53.95)	5.5 (53.95)	5.5 (53.95)
Connector	Type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	92x50	84x50	84x50
Packaging				
Quantity	Pcs	10	10	10
Unit weight	Kg	1.64	1.44	1.4
Total weight	Kg	17.74	15.74	15.34
Accessories				
Horizontal polarisation			Included	
Horizontal polarisation with tilt adj.			Included	
Vertical polarisation			Included	
Vertical polarisation with tilt adj.			Included	
Auxiliary boom			N/A	

Gain

BLU224F



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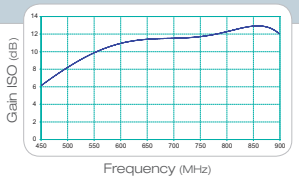

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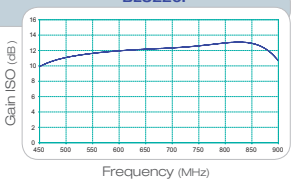
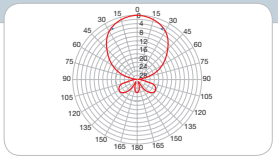


Pattern

BLU224F



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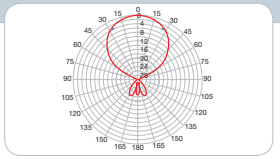
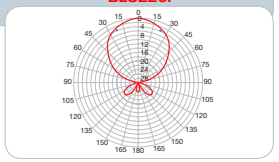


BLU220F



UHF aerials

BLU Series

BLU420F

Element detail

BLU920F

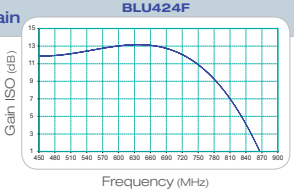
Standard 2 *

Item Code		BLU424F 217854	BLU425F 217855	BLU420F 217853	BLU920F 217856
Elements	No.	42	42	42	90
Band		IV	V	UHF	UHF
Channels		E21–E37	E38–E69	E21–E69	E21–E69
Bandwidth	MHz	470–606	606-862	470-862	470-862
Maximum gain	dBi	13	15	15	18
Front-to-back ratio	dB	27	26	30	30
Return loss	dB	-20	-22	-16	-18
Beamwidth (-3dB)	°	+/-22	+/-22	+/-22	+/-17
Wind load at 120Km/h (720N/m2)	Kg (N)	7.0 (68.67)	7.0 (68.67)	7.0 (68.67)	12.0 (117.72)
Connector	Type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	122x50	119x50	119x50	242x50
Packaging					
Quantity	Pcs	10	10	10	3
Unit weight	Kg	2.14	1.9	1.89	3.16
Total weight	Kg	22.74	20.34	20.24	9.88
Accessories					
Horizontal polarisation				Included	
Horizontal polarisation with tilt adj.				Included	
Vertical polarisation				Included	
Vertical polarisation with tilt adj.				Included	
Auxiliary boom			CA2		Included

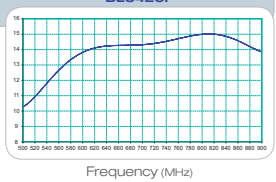
* For more information see www.dtg.org.uk website.

Gain

BLU424F



BLU425F



Pattern

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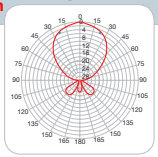

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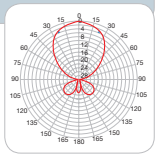

Gain

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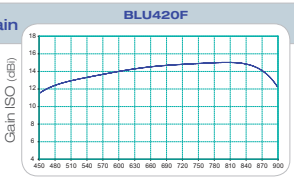

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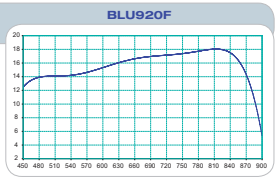

Pattern

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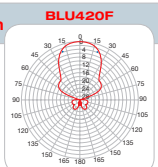

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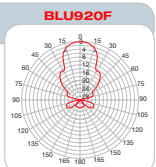


Aerials

UHF aerials

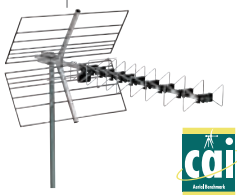
BLU PLUS Series

Pre-assembled aerials with F connector and excellent performance: high gain, high directivity and very good return loss. Easy to install and characterised by a highly reliable RF connection. 60mm maximum mast clamp diameter and the design allows good wind loading. This range is particularly characterised by its rod reflector.

BLU220PLUS

Standard 3

BLU420PLUS



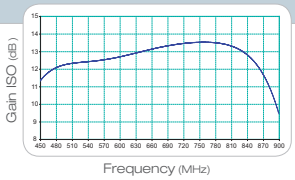
Standard 2

Item Code		BLU220PLUS 217857	BLU420PLUS 217858	BLU920PLUS 217859
Elements	No.	22	42	90
Band		UHF	UHF	UHF
Channels		E21–E69	E21–E69	E21–E69
Bandwidth	MHz	470-862	470-862	470-862
Maximum gain	dBi	13.5	15	18.5
Front-to-back ratio	dB	32	28	30
Return loss	dB	-18	-16	-16
Beamwidth (-3dB)	°	+/-23	+/-21	+/-15
Wind load at 120Km/h (720N/m2)	Kg (N)	7.5 (73.57)	9.0 (88.29)	14.0 (137.34)
Connector	Type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	84x50	119x50	242x50
Packaging				
Quantity	Pcs	10	10	2
Unit weight	Kg	1.25	1.72	3.25
Total weight	Kg	14.74	19.44	6.95
Accessories				
Horizontal polarisation			Included	
Horizontal polarisation with tilt adj.			Included	
Vertical polarisation			Included	
Vertical polarisation with tilt adj.			Included	
Auxiliary boom		N/A	CA2	Included

* For more information see www.dtg.org.uk website.

Gain

BLU220PLUS



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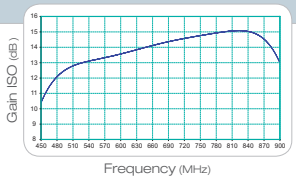

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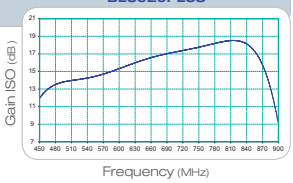
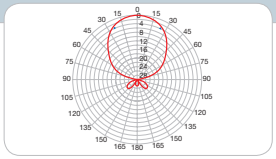


Pattern

BLU220PLUS



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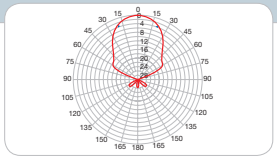

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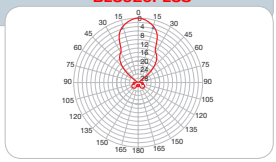


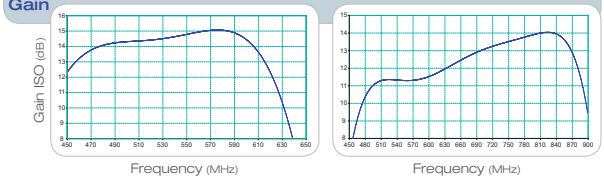
UHF aerials

LAMBDA Series

High performance aerials with F connector.
The design of the connector cap and dipole clamp offer great protection. They are characterised by their excellent mechanical reflector sturdiness, high front-to-back ratio, good return loss and high gain.
Mast clamp and joints of the boom are pre-assembled for easy installation. These aerials are also equipped with large wing nut bolt screws for excellent clamping.

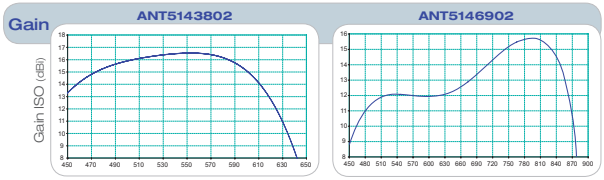
Item Code		ANT5093802 213051	ANT5096902 213053	ANT5143802 213054	ANT5146902 213056
Elements	No.	9	9	14	14
Band		IV	UHF	IV	UHF
Channels		E21–E38	E21–E69	E21–E38	E21–E69
Bandwidth	MHz	470–614	470-862	470–614	470-862
Maximum gain	dBi	15	14	16.5	15.6
Front-to-back ratio	dB	25	24	30	26
Return loss	dB	-14	-12	-16	-14
Beamwidth (-3dB)	°	+/-23	+/-23	+/-17	+/-17
Wind load at 120Km/h (720N/m2)	Kg (N)	16 (156.96)	15 (147.15)	19 (186.39)	17.5 (171.67)
Connector	Type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	55	55	55	55
Dimensions (L x W)	cm	161x50	152x50	238x50	177x50
Packaging					
Quantity	Pcs	1	1	1	1
Unit weight	Kg	2.9	2.72	3.74	3.38
Total weight	Kg	2.9	2.72	3.74	3.38
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		Included			
Vertical polarisation		Included			
Vertical polarisation with tilt adj.		Included			
Auxiliary boom		N/A		Included	

Gain

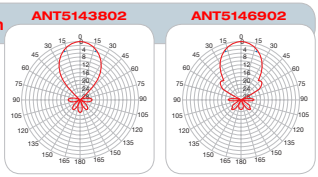


Pattern

Gain



Pattern



Aerials

UHF aerials

OMEGA Series

Excellent performance Yagi aerials, easy to install with high mechanical sturdiness. Important electrical performances include: high gain, high directivity and excellent front-to-back ratio.

OMEGA5

Standard 3

OMEGA8

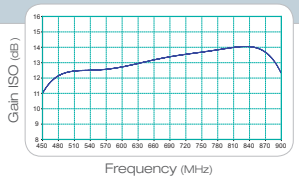
Standard 2

Item Code		OMEGA5 213021	OMEGA8 213022	OMEGA14 213023
Elements	No.	5	8	14
Band		UHF	UHF	UHF
Channels		E21–E69	E21–E69	E21–E69
Bandwidth	MHz	470-862	470-862	470-862
Maximum gain	dBi	14	16	17.5
Front-to-back ratio	dB	32	32	30
Return loss	dB	-18	-18	-18
Beamwidth (-3dB)	°	+/-23	+/-22	+/-19
Wind load at 120Km/h (720N/m2)	Kg (N)	4.5 (44.14)	5.5 (53.95)	8.0 (78.48)
Connector	Type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	77x58	107x58	159x58
Packaging				
Quantity	Pcs	2	2	2
Unit weight	Kg	1.6	1.78	2.4
Total weight	Kg	3.2	3.56	4.8
Accessories				
Horizontal polarisation			Included	
Horizontal polarisation with tilt adj.			Included	
Vertical polarisation			Included	
Vertical polarisation with tilt adj.			Included	
Auxiliary boom		N/A	CA2	Included

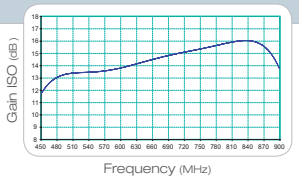
* For more information see www.dtg.org.uk website.

Gain

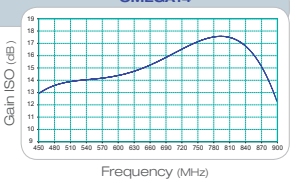
OMEGA5



OMEGA8

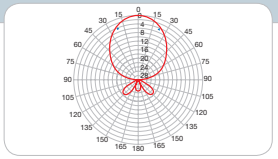


OMEGA14



Pattern

OMEGA5



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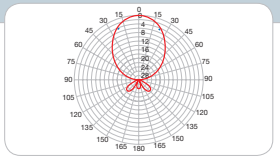

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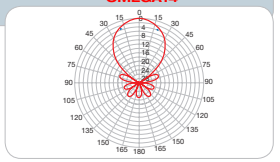


UHF aerials

TAU Series - grid reflector

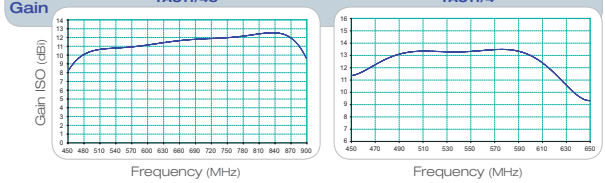
Yagi aerials with F connector.
Ideal for single or small MATV systems.
Steel boom, elements and reflector guarantee mechanical sturdiness.
Pre-assembled for easy installation.

Standard 3 *

Item Code		TAU11/45 213101	TAU11/4 213096	TAU11/5 213097	TAU21/45 213102
Elements	No.	11	11	11	21
Band		UHF	IV	V	UHF
Channels		E21–E69	E21–E37	E38–E69	E21-E69
Bandwidth	MHz	470-862	470–606	606-862	470-862
Maximum gain	dBi	12.5	13.5	12	14.5
Front-to-back ratio	dB	28	31	30	25
Return loss	dB	-16	-20	-17	-15
Beamwidth (-3dB)	°	+/-23	+/-23	+/-23	+/-22
Wind load at 120Km/h (720N/m2)	Kg (N)	3.2 (31.39)	3.7 (36.29)	3.2 (31.39)	4.8 (47.08)
Connector	Type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	97x50	115x50	87x50	197x50
Packaging					
Quantity	Pcs	10	10	10	5
Unit weight	Kg	1.28	1.3	1.18	1.84
Total weight	Kg	14.8	15	13.8	10.2
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		Included			
Vertical polarisation		Included			
Vertical polarisation with tilt adj.		Included			
Auxiliary boom		N/A			Included

* For more information see www.dtg.org.uk website.

Gain



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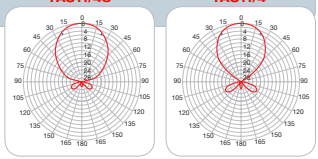

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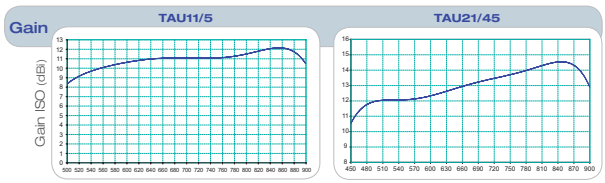

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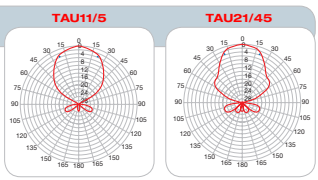


Aerials

UHF aerials

TAU Series - tube reflector

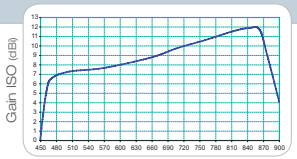
TAU15/..

Yagi aerials with F connector.
Ideal for single or small MATV systems.
Steel boom, elements and reflector guarantee mechanical sturdiness.
Pre-assembled for easy installation.

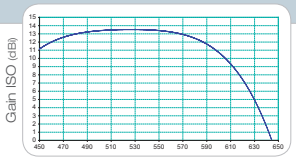
Item Code		TAU15/45 213100	TAU15/4 213094	TAU15/5 213095
Elements	No.	15	15	15
Band		UHF	IV	V
Channels		E21–E69	E21–E37	E38–E69
Bandwidth	MHz	470-862	470–606	606-862
Maximum gain	dBi	12	13.5	11
Front-to-back ratio	dB	24	24	28
Return loss	dB	-14	-20	-16
Beamwidth (-3dB)	°	+/-25	+/-25	+/-25
Wind load at 120Km/h (720N/m2)	Kg (N)	2.8 (27.46)	3.3 (32.37)	2.8 (27.46)
Connector	Type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	98x42	115x42	87x42
Packaging				
Quantity	Pcs	10	10	10
Unit weight	Kg	1	1.06	0.96
Total weight	Kg	12	12.6	11.6
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		Included		
Vertical polarisation		Included		
Vertical polarisation with tilt adj.		Included		
Auxiliary boom		N/A		

Gain

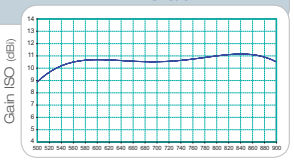
TAU15/45



TAU15/4

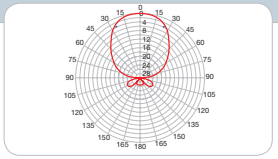


TAU15/5

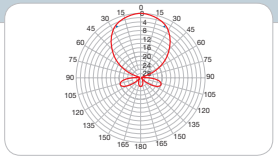


Pattern

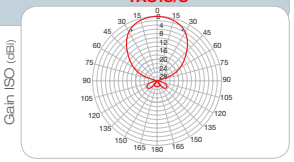
TAU15/45



TAU15/4



TAU15/5



UHF aerials

Yagi wideband

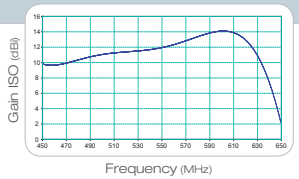
10BL..

Yagi aerials with F connector and 4 element reflector, suitable for receiving full band IV, V or UHF.
Important characteristics include: good electrical performance, small practical packaging for easy installation, transport and storage.

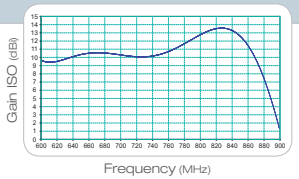
Item Code		10BL4F 219406		10BL5F 219407		10BL45F 219446	
Elements	No.	10		10		10	
Band		IV		V		UHF	
Channels		E21–E37		E38–E69		E21–E69	
Bandwidth	MHz	470–606		606-862		470-862	
Maximum gain	dBi	14		13.5		12.5	
Front-to-back ratio	dB	27		22		24	
Return loss	dB	-22		-17		-16	
Beamwidth (-3dB)	°	+/-24		+/-27		+/-28	
Wind load at 120Km/h (720N/m2)	Kg (N)	2.8 (27.46)		2.3 (22.56)		2.3 (22.56)	
Connector	Type	F		F		F	
Impedance	Ohm	75		75		75	
Maximum mast Ø	mm	42		42		42	
Dimensions (L x W)	cm	135x36		103x28		94x36	
Packaging							
Quantity	Pcs	20		20		20	
Unit weight	Kg	0.752		0.612		0.625	
Total weight	Kg	18.04		15.24		15.5	
Accessories							
Mast Ø	mm	42	60	42	60	42	60
Horizontal polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Horizontal polarisation with tilt adj.		PVZ-60					
Vertical polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Vertical polarisation with tilt adj.		PVZ-60					
Auxiliary boom		N/A					

Gain

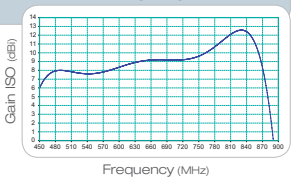
10BL4F



10BL5F

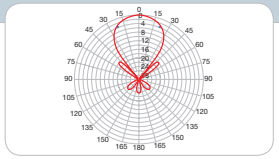


10BL45F

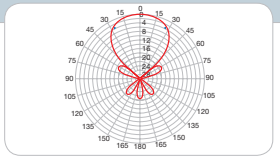


Pattern

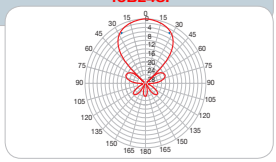
10BL4F



10BL5F



10BL45F



Aerials

UHF aerials

Yagi wideband

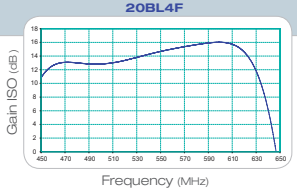
20BL..

Yagi aerials with F connector and 4 element reflector, suitable for receiving full band IV, V or UHF.
Important characteristics include: good electrical performance, small practical packaging for easy installation, transport and storage.

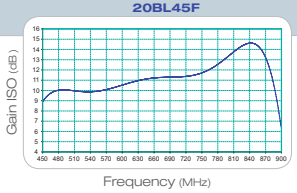
Item Code		20BL4F 219606		20BL45F 219646	
Elements	No.	20		20	
Band		IV		UHF	
Channels		E21–E37		E21–E69	
Bandwidth	MHz	470–606		470-862	
Maximum gain	dBi	16		14.5	
Front-to-back ratio	dB	27		24	
Return loss	dB	-20		-16	
Beamwidth (-3dB)	°	+/-17		+/-20	
Wind load at 120Km/h (720N/m2)	Kg (N)	4.2 (41.20)		3.6 (35.31)	
Connector	Type	F		F	
Impedance	Ohm	75		75	
Maximum mast Ø	mm	42		42	
Dimensions (L x W)	cm	232x37		187x39	
Packaging					
Quantity	Pcs	20		20	
Unit weight	Kg	0.86		0.78	
Total weight	Kg	20.2		18.6	
Accessories					
Mast Ø	mm	42	60	42	60
Horizontal polarisation		Included	PVF-60	Included	PVF-60
Horizontal polarisation with tilt adj.		N/A			
Vertical polarisation		PV10			
Vertical polarisation with tilt adj.		PV10			
Auxiliary boom		CA1			

Gain

20BL4F

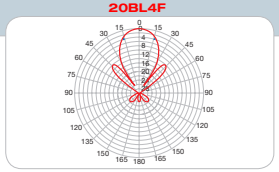


20BL45F

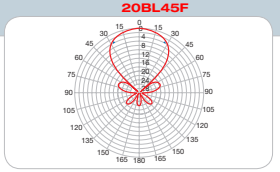


Pattern

20BL4F



20BL45F



UHF aerials

Yagi fullband

10RD45F

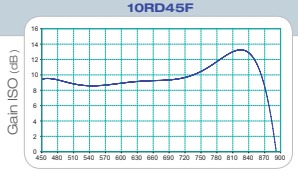
20RD45F

Yagi aerials with F connector and grid reflector, suitable for receiving fullband IV, V or UHF.
Important characteristics include: good electrical performance, small practical packaging for easy installation, transport and storage.

Item Code		10RD45F 219546		20RD45F 219746	
Elements	No.	10		20	
Band		UHF		UHF	
Channels		E21–E69		E21–E69	
Bandwidth	MHz	470-862		470-862	
Maximum gain	dBi	13		15,5	
Front-to-back ratio	dB	24		24	
Return loss	dB	-20		-18	
Beamwidth (-3dB)	°	+/-26		+/-22	
Wind load at 120Km/h (720N/m2)	Kg (N)	2.5 (24.52)		4.3 (42.18)	
Connector	Type	F		F	
Impedance	Ohm	75		75	
Maximum mast Ø	mm	42		42	
Dimensions (L x W)	cm	99x36		193x36	
Packaging					
Quantity	Pcs	20		20	
Unit weight	Kg	0.5		0.88	
Total weight	Kg	13		20.6	
Accessories					
Mast Ø	mm	42	60	42	60
Horizontal polarisation		Included	PVZ-60	Included	PVZ-60
Horizontal polarisation with tilt adj.		PVZ-60		N/A	
Vertical polarisation		Included	PVZ-60	PV10	
Vertical polarisation with tilt adj.		PVZ-60		PV10	
Auxiliary boom		N/A		Included	

Gain

10RD45F



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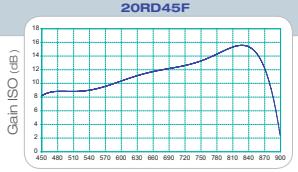
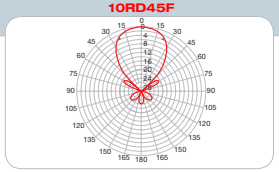
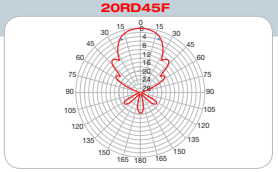


Pattern

10RD45F



20RD45F



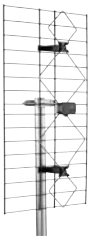
Aerials

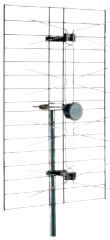
UHF aerials

Panel aerials

PU4F
P54F

PU4AF
P54AF



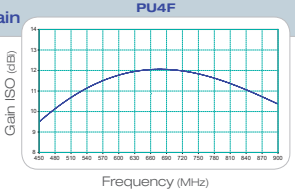


Panel aerials with high gain, steel reflector, F connector and aluminium radiant elements for PU4F and P54F and steel for PU4AF.

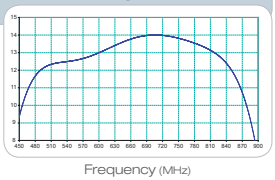
Item Code		PU4F 217424	PU4AF 217423	P54F 217425	P54AF 217426
Band		UHF	UHF	V	V
Channels		E21-E69	E21-E69	E38-E69	E38-E69
Bandwidth	MHz	470-862	470-862	606-862	606-862
Maximum gain	dBi	12	14	12	14
Front-to-back ratio	dB	21	20	24	22
Return loss	dB	-14	-14	-13	-15
Beamwidth (-3dB)	°	+/-30	+/-24	+/-30	+/-24
Wind load at 120Km/h (720N/m2)	Kg (N)	4.0 (39.24)	5.0 (49.5)	3.2 (31.39)	4.0 (39.24)
Connector	Type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (H x L)	cm	71x38.5	50x76.5	62x32	71x38.5
Packaging					
Quantity	Pcs	15	10	15	15
Unit weight	Kg	0.94	1.3	0.8	1.1
Total weight	Kg	14.8	13.3	12.4	16.9
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		N/A			
Vertical polarisation		PVP			
Vertical polarisation with tilt adj.		N/A			
Auxiliary boom		N/A			

Gain

PU4F

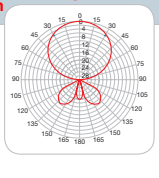


PU4AF

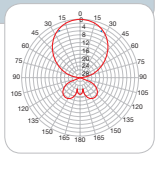


Pattern

PU4F

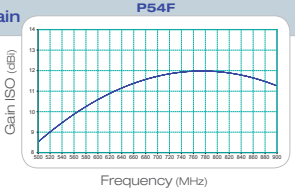


PU4AF

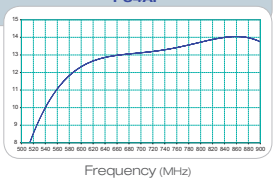


Gain

P54F

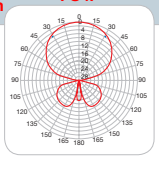


P54AF

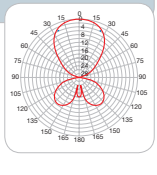


Pattern

P54F



P54AF

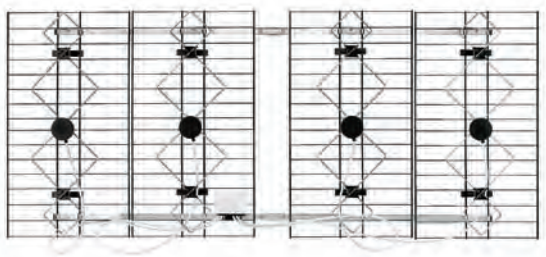


UHF aerials

Panel aerials

PU16F

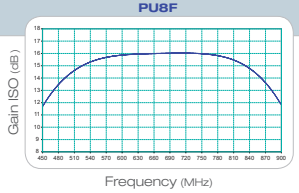
Multiple panel aerials with F connector.
High gain and directivity of the multiple panel series are ideal for the reception of weak signals and signals from lots of different transmitters.



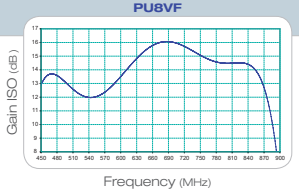
Item Code		PU8F 217428	PU8VF 217429	PU16F 217436
Band		UHF	UHF	UHF
Channels		E21-E69	E21-E69	E21-E69
Bandwidth	MHz	470-862	470-862	470-862
Maximum gain	dBi	16	16	18.5
Front-to-back ratio	dB	26	26	28
Return loss	dB	-10	-10	-10
Beamwidth (-3dB)	°	+/-15	+/-10	+/-10
Wind load at 120Km/h (720N/m2)	Kg(N)	13 (127.53)	13 (127.53)	26 (255.06)
Connector	Type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (H x L)	cm	72x88.5	40x15.6	72x167
Packaging				
Quantity	Pcs	1	1	1
Unit weight	Kg	2.9	3.02	5.28
Total weight	Kg	2.9	3.02	5.28
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		N/A		
Vertical polarisation		N/A		
Vertical polarisation with tilt adj.		N/A		
Auxiliary boom		N/A		

Gain

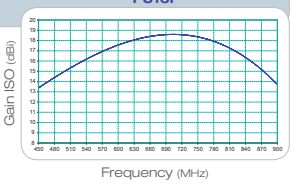
PU8F



PU8VF

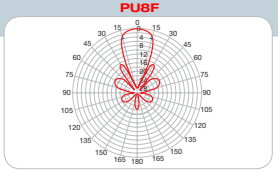


PU16F



Pattern

PU8F



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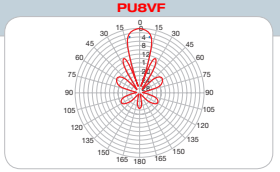
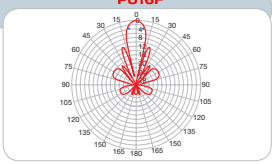


PU16F



Aerials

LOG PERIODIC aerials

LP Series with F connector

Log periodic pre-assembled aerials characterised by easy connection due to the connector being located near the mast clamp. High level design of the dipole connection guarantees a highly reliable RF contact. Due to the specific mast clamp these aerials can be assembled in vertical or horizontal polarisation without additional accessories.
They have excellent mechanical clamp resistance of the boom elements, great mechanical resistance at the rotation around the mast and good electrical performances.
F connector is protected by a cap with bayonet clamp.

Standard 3

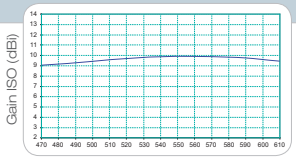
Standard 4

Item Code		LP4F 216151	LP45NF 216150	LP45F 216149	LP5F 216108
Band		IV (Group A)	UHF	UHF	V (Group E)
Channels		E21-E37	E21-E69	E21-E69	E38-E69
Bandwidth	MHz	470-606	470-862	470-862	606-862
Maximum gain	dBi	10	11.5	11	12
Front-to-back ratio	dB	32	36	36	36
Return loss	dB	-18	-15	-15	-15
Beamwidth (-3dB)	°	+/-25	+/-25	+/-25	+/-28
Wind load at 120Km/h (720N/m2)	Kg (N)	2.8 (27.46)	3.0 (29.43)	3.0 (29.43)	3.0 (29.43)
Connector	Type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	65x33	115x86	99x32	99x24
Packaging					
Quantity	Pcs	60	20	20	20
Unit weight	Kg	0.56	0.792	0.792	0.767
Total weight	Kg	38	15.84	16.34	15.84
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		PV10			
Vertical polarisation		Included			
Vertical polarisation with tilt adj.		PV10			
Auxiliary boom		N/A			

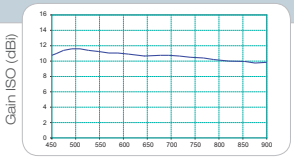
***** For more information see www.dtg.org.uk website.

Gain

LP4F - Band IV

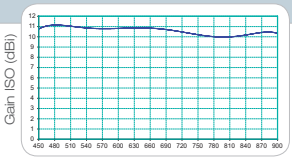


LP45NF - UHF Band

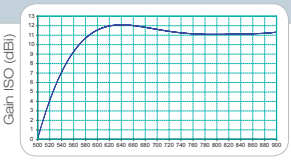


Gain

LP45F - UHF Band

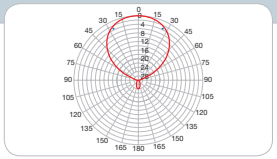


LP5F - Band V

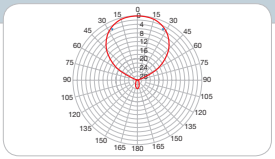


Pattern

LP4F - Band IV

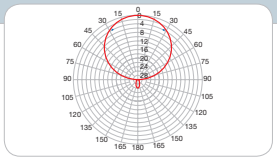


LP45NF - UHF Band

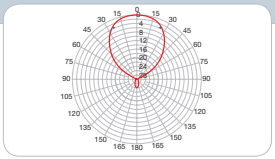


Pattern

LP45F - UHF Band



LP5F - Band V

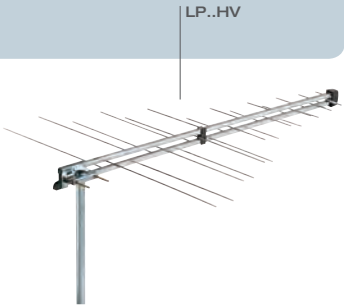


Aerials

LOG PERIODIC aerials

LP Series

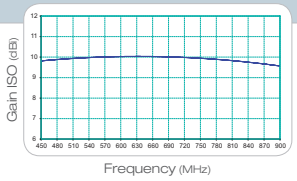
Pre-assembled aerials that are easy to install and characterised by a highly reliable RF connection. They are available in various models in order to fulfil most installations.



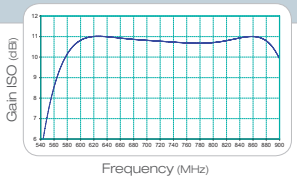
Item Code		LP45HV 216147	LP5HV 216107
Band		UHF	V
Channels		E21-E69	E38-E69
Bandwidth	MHz	470-862	606-862
Maximum gain	dBi	10	11
Front-to-back ratio	dB	36	36
Return loss	dB	-15	-15
Beamwidth (-3dB)	°	+/-28	+/-25
Wind load at 120Km/h (720N/m2)	Kg (N)	3.0(29.43)	3.0(29.43)
Connector	Type	Clamp	Clamp
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	94x32	94x24
Packaging			
Quantity	Pcs	20	20
Unit weight	Kg	0.78	0.74
Total weight	Kg	16.1	15.3
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		PV10	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		PV10	
Auxiliary boom		N/A	

Gain

LP45HV - UHF Band

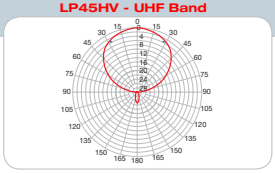


LP5HV - Band V

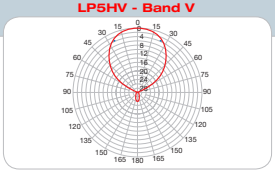


Pattern

LP45HV - UHF Band

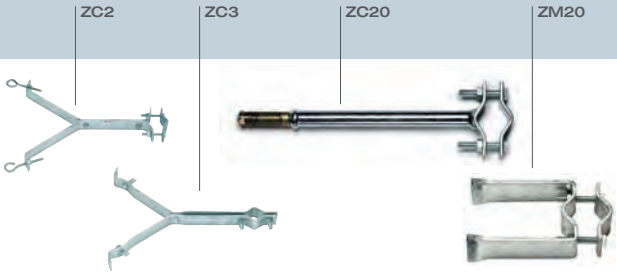


LP5HV - Band V



Mast brackets

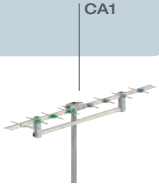
Treated galvanised steel.
For masts: TN15, TN25, TN32, TK4 and TK5.
See page 37



Item	Code	Description	Packaging Pcs
ZC2	293302	Reinforced - Chimney mount - for Ø 25-48mm - overhang 16.5cm	25
ZC3	293330	Chimney mount - for Ø 25-35mm - overhang 17cm	40
ZC20	293320	Wall mount - for Ø 25-48mm - length 20cm	50
ZM20	289541	Wall bracket for elbow shaped mast	20
AN1	293301	**Corner plate** with grooves for iron wire lashings	100
BA6	293400	**Base for telescopic masts** Suitable for ridged roofs - for Ø 25-48mm.	20

Auxiliary booms

CA1 and CA2 are designed to be used with different aerials.
Auxiliary boom increases the mechanical strength of these aerials.



Item	Code	Wind load at 120Km/h Kg	Packaging Pcs	Kg
CA1	219600	0.8	20	6.2
CA2	219602	0.8	20	6.2

Check the technical data of each antenna for the required auxiliary boom.

Aerials

Aerial accessories

Aerial fittings

Treated galvanised steel.

PVZ-60

PVF-60

PG20

Item	Code	Description	Length mm	Packaging Pcs
PV10	210011	For vertical polarisation. Max. mast Ø 60mm	280	30
PV20	210022	For vertical polarisation of two coupled band III or band IV aerials	950	20
PVZ-60	210065	For zenithal orientation - For maximum mast Ø 60mm		25
PVF-60	210064	Fixed horizontal polarisation - For maximum mast Ø 60mm		25
PVP	210002	For vertical polarisation panel aerials - For maximum mast Ø 60mm		20
PG20	289540	**Elbow shaped mast for roof** Diameter 42x3mm - Tube grip: diameter 25-45mm	2	1

Aerial accessories

Mechanical accessories for satellite dishes

STM1

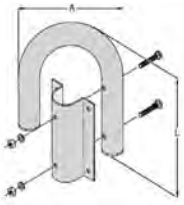


Fig. 1a

RPP60

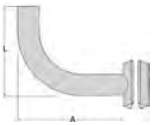


Fig. 1b

ST25/45

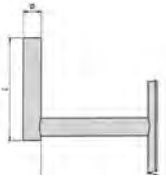


Fig. 1c

ST50C

Fig. 1d

BA914

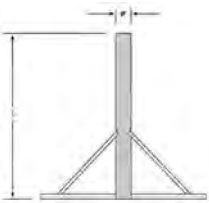


Fig. 1e

Item	Code	Description	Fig.	Ø mm	L cm	H cm	Mast bracket mm	Packaging Pcs	Weight Kg
STM1	281801	Wall mast	1a	40	31	25	-	1	1.5
ST25M	289280	Wall mast	1c	40	23	25	30-80*	1	1.73
ST45M	289281	Wall mast	1c	40	23	45	30-80*	1	2.26
ST50C	289173	Wall chimney bracket	1d	50	42	25	-	10	2.2
RPP60	289182	Dish mount	1b	40	25	25	30-60	20	1.25
BA914	280674	Base for dish mount	1e	76	100	-	-	1	13
STF	289282	Mast mounting kit for ST25M and ST45M		30-80				1	0.56
STK	289174	ST50C chimney accessories						1	0.4

* Use STF kit for mast installation.

Aerial accessories

Self-supporting masts

Dip treated galvanised steel.

Item	Code	Description	Height m	Weight Kg	Ø mm	Wind speed Km/h	Wind load Kgm	
Single section model (packaging 10 pcs)								
TN15	293115	Can support one 10 element UHF aerial + one 4 element VHF b.3 aerial	1.5*	0.9	25x1	100	3.1	
TN25	293125	Can support one 10 element UHF aerial + one 2 element VHF b.1 aerial or one 6 element VHF b.3 aerial	2.5	1.5	25x1	110	5.1	
TN32	293132	Can support any type of VHF aerial + one UHF aerial	2.5	3.8	32x2	-	22.0	

Item	Code	Description	Height m	Weight Kg	Two sections Upper Ø	Two sections Lower Ø	Wind load Kgm	
Single section model (packaging 5 pcs)								
TK4	293140	Can support one 10 element UHF aerial + one 2 element VHF b.1 aerial or one 6 element VHF b.3 aerial with tapered joint	4	4.2	25x1	32x2	15.4	
TK5	293150	Can support one 10 element UHF aerial + one 4 element VHF b.3 aerial with tapered joint	5	5.2	25x1	32x2	8.8	

***** Two TN15 are mounted together to obtain a height of 3 metres: all performances refer to this height.

Aerial accessories

Guyed extendable masts

Dip treated galvanised steel complete with brace attachment rings and section end markers.

Item	Code	Description	Wind load Kgm	
PT4	293104	Height 3.80m - 2x2m - Weight 3.85Kg - Ø 25x1.5 - 30x1.5mm Packaging 5 pcs	7.2**	
PT6	293106	Height 5.60m - 3x2m - Weight 6.3Kg - Ø 25x1.5 - 30x1.5 - 35x1.5mm Packaging 3 pcs	7.2**	
PT8	293108	Height 7.40m - 4x2m - Weight 9.2Kg - Ø 25x1.5 - 30x1.5 - 35x1.5 - 40x1.5mm Packaging 2 pcs	7.2**	

****** Loading at the highest fixing point.

SAT dishes

SAT dishes

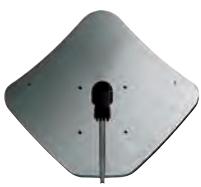
PENTA Series

Back of PENTA85

Dual feed support

PENTA White

PENTA Grey



PENTA Brick red

Item		PENTA DIGIT	PENTA85
Frequency range	GHz	10.7-12.75	10.7-12.75
Dimensions Ø	mm	624x624	775x775
Offset angle	°	22.3	22.1
Efficiency		≥70%	≥70%
Gain at 10.95GHz	dB	36.5	39
Cross polarisation on axis	dB	>37	>38
First side lobe	dB	<-32	<-34
Noise temperature		40°K at 30° elevation	40° K at 30° elevation
F/D ratio		0.7	0.7
Beamwidth (-3dB)	°	3	2.2
LNB clamp	mm	23-28; 40; 60	23-28; 40; 60
Elevation angle		Maximum tilt 60°	Maximum tilt 60°
Mast clamp	mm	35-80	35-80
Material		Alumium/steel	Alumium/steel
Bracket material		Steel - aluminium/zinc treatment	Steel - aluminium/zinc treatment
Wind load at 150Km/h	Kg	53	81

INDIVIDUAL PACKAGING

Equivalent Ø cm*	Model	Item	Code	Material	Colour	Dual feed support 6°	Dual feed support 4°	Mounting kit	Packaging Pcs
68	DIGIT	DIGIT-A	211104	Steel	White	DFPDIGIT (211003)	-	Included	1
		DIGIT-GA	211105		Grey				
		DIGIT-RA	211106		Brick red				
		DIGIT	211101	Aluminium	White				
		DIGIT-G	211102		Grey				
		DIGIT-R	211103		Brick red				
85	PENTA	PENTA85-A	211205	Steel	White	DFP85R** (211002) or DFP85 (211001)	MB3UZ (289777)		
		PENTA85G-A	211206		Grey				
		PENTA85R-A	211207		Brick red				
		PENTA85	211201	Aluminium	White				
		PENTA85G	211203		Grey				
		PENTA85R	211204		Brick red				

MULTIPLE PACKAGING

Equivalent Ø cm*	Model	Item	Code	Material	Colour	Dual feed support 6°	Dual feed support 4°	Mounting kit	Packaging Pcs
68	DIGIT	DGTX10-A	211112	Steel	White	DFPDIGIT (211003)	-	ZNCDGTX10 (211110)	10
		DGTX10-GA	211116		Grey				
		DGTX10-RA	211115		Brick red				
		DGTX10	211111	Aluminium	White				
85	PENTA	P85X10-A	211210	Steel	White	DFP85R** (211002) or DFP85 (211001)	MB3UZ (289777)	ZNC85X10 (211208)	
		P85GX10-A	211217		Grey				
		P85RX10-A	211216		Brick red				
		P85X10	211209	Aluminium	White				
		P85GX10-B	211212		Grey				
		P85RX10-B	211211		Brick red				

* Diameter equivalent to that of a traditional offset dish.
** Adjustable

SAT dishes

Offset Series

RO80ACCP + ZNO80ACN

RO80AP + ZNO80AP

RO80AP + ZNO80APN (premounted)

RO85A + ZNO85P

R0100 + ZNO100C | PT100

RO100A + ZNO100P

RO125AP + ZNO125P

Diameter cm	Item	External dimensions mm	Offset angle °	F/D	Elevation range °	Mast diameter mm	Efficiency %	Gain at 10.7GHz dB	Gain at 11.7GHz dB	Gain at 12.7GHz dB
60	SAT11601	632x583	24	0.66	4/55	30-60	>69	34.4	35	36.2
	RO60AX10	632x583	24	0.66	4/55	20-50	>69	34.7	35.5	36.2
75	SAT12751*	750x640	23	0.7	0/55	30-60	>70	36.2	36.5	36.9
	SAT12753	830x750	23	0.65	15/48	50-60	>70	37.2	37.6	38.0
80	P80APN	768x846	23	0.66	0/80	30-60	>75	37.0	37.7	38.5
	RO80APX50	768x846	23	0.66	0/80	30-60	>75	37.0	37.7	38.5
	RO80ACCPX50GN	845x779	23	0.66	17/58	30-60	>75	37.0	37.7	38.5
85	RO85APX5G	910x837	21	0.66	1/60	30-60	>70	37.4	38.2	38.9
90	SAT12901	1030x900	21	0.5	5/55	50-60	>70	38.1	38.8	39.5
100	PT100C	970x1040	21	0.66	0/80	30-90	>70	39.7	40.2	40.5
	PT100AC	970x1040	21	0.66	0/80	30-90	>70	39.7	40.2	40.5
	RO100CRX6	970x1040	21	0.66	0/80	30-90	>70	39.7	40.2	40.5
	RO100ACX6	970x 1040	21	0.66	0/80	30-90	>70	39.7	40.2	40.5
	RO100APX5G	1032x952	23	0.66	0/90	35-60	>72	39.4	40.0	40.6
120	RO120N	1164x1240	23	0.66	20/50	55-100	>70	40.5	41.4	42.3
125	RO125APX3G	1345x1240	23	0.66	0/90	40-60	>74	41.0	41.6	42.4
150	RO150	1614x1488	21.3	0.66	20/90	55-100	>70	42.6	43.4	44.2

* Bi-SAT 6°/9°

SAT dishes

INDIVIDUAL PACKAGING

Equivalent Ø cm	Item	Code	Material	Colour	Dual feed support 6°	Dual feed support 4°	Mounting kit AZ - EL	Packaging Pcs
75	**SAT12751**	SAT12751	Composit	White	-	-	Included	1
	SAT12753	SAT12753	Composit	White	-			
80	**P80APN***	211316	Steel	White	DFAN (289487)	MB3UZ (289777)	Included	
90	**SAT12901**	SAT12901	Composit	White	-	-	Included	
100	**PT100C**	289291	Aluminium	White	DFO100C (289294)	-	Included	
	PT100AC	289293	Steel	White	DFO100C (289294)	-	Included	
120	**RO120N****	289197	Aluminium	White	DFO120N (289199)	-	AZO120N (289196)	
150	**RO150****	289139	Aluminium	White	DFO120N (289199)	-	AZO150 (289140)	

MULTIPLE PACKAGING

Equivalent Ø cm	Item	Code	Material	Colour	Dual feed support 6°	Dual feed support 4°	Mounting kit AZ - EL	Packaging Pcs
60	**RO60AX10**	280610	Steel	White	-	-	ZNO60AC (289279)	10
	SAT11601X500	289428	Steel	White			ZNO60AV (289430)	500
80	**RO80APX50***	289479	Steel	White	DFAN (289487)	-	ZNO80AP (289271)	50
	RO80APX200*	289283	Steel	White			ZNO80APN (289480)	200
	RO80ACCPX 50GN*	289834	Steel	White	DFAN (289487)	DFP 9-13 (289513)	ZNO80ACN (289825)	50
	RO80ACCPX 200GN*	289826	Steel	White				200
85	**RO85APX5G**	289828	Aluminium	White	DFO100C (289294)	-	ZNO85PX5G (289829)	5
100	**RO100APX5G**	289830	Aluminium	White	DFAN (289487)	-	ZNO100PX5 (289831)	5
	RO100CRX6	289287	Aluminium	Red	DFO100C (289294)		ZNO100C (289285)	6
	RO100ACX6	289299	Steel	White				6
125	**RO125APX3G**	289832	Aluminium	Red	-	-	ZNO125PX3 (289833)	3

Wind load refers to the diameter of the reflector with 120Km/h wind speed (Kg)

Ø (cm) dish	60	65	75	80	85	90	100	120	150
Wind load @ 120Km/h (Kg)	34	42	47	55.2	70	80	91	145	235

* SKY approved
** Polar mount PMO150 - code 289141

Kit systems

Digital kits

Item	Code	Description	Item	Code	Description
P80APK	211308	• RO80AP dish • Universal LNB	**P85AK**	211220	• PENTA85-A dish • Universal LNB
DIGIT-AK	211108	• DIGIT-A dish • Universal LNB	**P85K**	211219	• PENTA85 dish • Universal LNB
DIGITK	211107	• DIGIT dish • Universal LNB			

LNB'S

Universal LNB'S

The Fracarro range of LNB'S guarantee excellent signal quality and can be used for all requirements, from a simple individual installation to the most complex DTH installation and for multipoint distribution.
Low phase noise and high reliability guarantee a maximum quality reception of all High Definition (HD) programs.

UNIVERSAL SINGLE LNB

Item	Code	Number of outputs	Gain dB	Power consumption mA
LSU03* New	287090	1	55	70

UNIVERSAL TWIN LNB

Item	Code	Number of outputs	Gain dB	Power consumption mA
CDPUTZN	289822	2	55	200

UNIVERSAL QUAD LNB

Item	Code	Number of outputs	Gain dB	Power consumption mA
CDPU4ZN*	289823	4	55	200

UNIVERSAL OCTO LNB

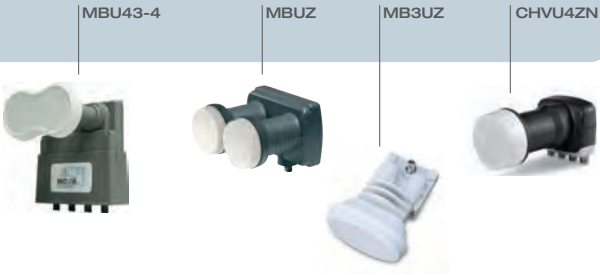
Item	Code	Number of outputs	Gain dB	Power consumption mA
CDPU8ZN	289824	8	55	250

* SKY approved

SAT dishes

LNB'S

Universal LNB'S



UNIVERSAL MONOBLOC LNB'S

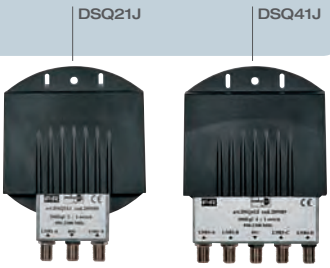
Item	Code	Number of outputs	Gain dB	Satellite orbital distance	Power consumption mA
MBUZ	289129	1	55	6°	120
MB3UZ	289777	1	55	4°	120
MBUTZ	289307	2	55	6°	200
MBU4Z	289306	4	55	6°	220
MBU43-4 New	287111	4	55	4.3°	220

UNIVERSAL QUATTRO LNB

Item	Code	Number of outputs	Gain dB	Power consumption mA
CHVU4ZN*	289821	4	55	200

* SKY approved

DiSEqC switches



Line switches with DiSEqC control on coaxial cable, controlled by satellite receivers with built-in DiSEqC tone generator.

Item	Code	Band MHz	Inputs No.	Outputs No.	Insertion loss dB	DiSEqC	Isolation dB	Packaging Pcs
PAS7212101*	PAS7212101	950-2300	2	1	3	1.0	30	1
DSQ21J*	289588	950-2300	2	1	4	2.0	35	1
DSQ41J*	289589	950-2300	4	1	4	2.0	35	1

* Outdoor plastic box included.

Line amplifiers

AS10

AS20

To amplify satellite signals to power a small system or preamplify satellite signals to power larger systems.
Operates on 900-2150MHz with a sloped gain to compensate for the coaxial cable loss.
Die-cast aluminium housing with female F connectors.

Item	Code	Band MHz	Gain dB	Noise dB	Op. voltage V	Consump. mA	Impedance Ohm	Connectors	Output dBµV	Pack. Pcs	Dimensions mm
AS10	289253	950-2150	9-12	<7	13-18	25@13V	75	F female	110	10	Ø 17 - L=70
AMP6600	AMP6600	950-2150	12-17	8	13-18	40@13V	75	F female	105	1	1x1.5x70
AS20*	284013	950-2150	17-20	10	13-20	80@13V	75	F female	120	1	71.5x51x21

* Mast housing (product CNJS) available for external use.

Electronic mast and indoor equipment

Fracarro offers a wide range of filters, combiners and amplifiers that provide excellent performance and functionality.

They are a result of exclusive design projects specifically to create easy to install and use systems.

Mast equipment

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Mast equipment

Combiners - Attenuators

Mast combiners with F connectors

2 or 3 input combiners with F connectors that can be used as a demixer using the output connector as an input (mix). Impedance 75 Ohm. Adjustable plastic strap for mast mounting Ø 60mm max. Compatible with DTT signals in COFDM modulation. Operating temperature: -10 to 55°C.

- Totally shielded metal frame

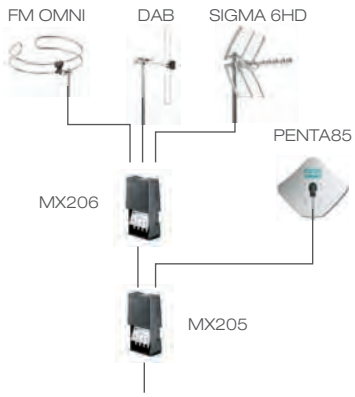
MX..

Dimensions
74x36x58mm

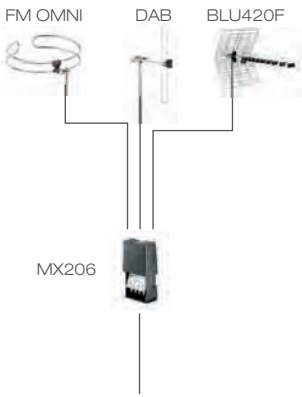
Item	Code	Input 1	Input 2	Input 3	Output 1	Output 2	Insertion loss dB			Return loss dB	Mul. pack. Pcs
							Inp. 1	Inp.2	Inp. 3		
MX201	223201	VHF + DC	UHF	-	Mix + DC	-	0.2	0.2	-	20	6
MX202	223202	VHF + UHF + DC	VHF + UHF (with or without DC)	-	Mix + DC	-	4	4	-	10	6
MX203	223203	VHF + DC	UHF	-	Mix + DC	Mix + DC	3.5	3.5	-	10	6
MX204	223204	B. V + DC	B. V + DC	-	Mix + DC	-	0.2	0.2	-	20	6
MX205	223217	VHF + UHF	Sat + DC	-	Mix + DC	-	0.5	1	-	15	6
MX206	223218	B. I + FM	DAB	UHF + DC	Mix + DC	-	0.5	0.5	1	15	6
MX208	223220	VHF (DC selectable via Jumper)	UHF (DC selectable via Jumper)	-	Mix + DC	-	0.5	1	-	15	6
MX210 New	223222	VHF	B. IV	B. V + DC	Mix + DC	-	0.5	1	1	15	6
MX211 New	223221	VHF	UHF	UHF + DC	Mix + DC	-	0.5	4	4	15	6

Note: VHF includes the FM and DAB band, band IV and band V represent Group A and Group E bands.

MX Series - Combiners



To combine off air UHF and VHF signals with satellite.



To combine off air UHF, FM and DAB signals. For DTH applications.

All diagrams are for illustration purposes only, actual connections may vary.

Combiners - Attenuators

Channel mast combiners

Combiners used for mixing 1, 2 or 3 UHF channels (CHANNELS INPUT) from a second aerial to the rest of the TV channels (TV INPUT). They are totally shielded in a metal frame with black plastic housing and are equipped with F connectors. Adjustable plastic strap for mast mounting Ø 60mm max.

MEF1/..

Dimensions
105x60x120mm

MEF2/..
MEF3/..

Dimensions
127x58x129mm

Item	Code	Operating frequency MHz	Insertable channels	CHANNELS INPUT Insertion loss dB	CHANNELS INPUT Non-adjacent ch. selectivity dB	TV INPUT Insertion loss dB	TV INPUT Channel traps attenuation dB	Pack. Pcs
MEF1/..(1)	225882	470-862	1	4	20	5	15	1
MEF2/..(1)	225992	470-862	2	4	20	5	15	1
MEF3/..(1)	225993	470-862	3	4	20	5	15	1

(1) Complete the code by inserting the channel reference.

Combiners - Attenuators

Indoor combiner with F connectors

Indoor combiner with F connectors. Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

- Totally shielded metal frame

Item	Code	Input 1	Input 2	Output 1	Insertion loss dB Inp. 1	Insertion loss dB Inp. 2	Return loss dB	Pack. Pcs
JSVU3	223109	VHF + S (40-446MHz)	UHF (470-862MHz)	Mix	1	1	10	20

Combiners - Attenuators

Indoor combiners

Indoor TV SAT combiners that can also be used as a demixer.
Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

- High isolation between inputs

MXST

Dimensions
48x50x20mm

Item	Code	Input 1	Input 2	Output 1	Insertion loss dB Input 1	Insertion loss dB Input 2	Return loss dB	Pack. Pcs
MXST	226400	TV (47-862MHz)	SAT + DC (950-2150MHz)	Mix + DC	0.5	0.5	15	15
PAS0303011	PAS0303011	2 inputs: TV and SAT (950-2150MHz). Attenuation: 0.5dB on both inputs.						

Mast equipment

Combiners - Attenuators

Channel attenuators

SF..

For connection after the aerial and before any eventual amplifier. For two or more sections which can be tuned to different frequencies or to the same frequency if greater attenuation is required. To tune, turn the core of the trimmer. D.C. through-line (apart from SF5).
Packaging 10 Pcs

- The various sections are independent and do not affect each other

Dimensions
28x78x20mm

Item	Code	Two cells - For indoor installations
SF4	226707	Stops one or two band IV channels. Attenuation from 20 to 30dB. Coaxial connectors I.E.C. Ø 9.5mm.
SF5	226708	Stops one or two band V channels. Attenuation from 20 to 30dB. Coaxial connectors I.E.C. Ø 9.5mm

Mast amplifiers

JS2RT

JS2RT

To amplify signals coming from 1 aerial.
Waterproof plastic housing. Power requirement 12VDC, on a single output.
Adjustable plastic strap for mast mounting Ø 60mm max.
Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

- Totally shielded metal frame with F connectors

Dimensions
74x35x89mm

Item	Code	Inputs	Input band MHz	Gain dB	Output level dBµV	Noise figure dB	Power consump. mA@12VDC	Pack. Pcs
JS2RT	223101	1	47-862	7-22	108	4	60	10

Accessories

IZ2

Item	Code	Description
IZ2	290018	Impedance for D.C. transfer between two terminals on multi-band amplifiers. Packaging 100 Pcs

Mast amplifiers

MAP 12 Volt Series

MAP amplifiers to mix and amplify signals from one or more aerial.
Power requirement 12V, one mixed output.
Compatible with DTT signals in COFDM modulation.
Adjustable plastic strap for mast mounting Ø 60mm max.
Operating temperature: -10 to 55°C.

- Totally shielded in a metal frame and F connectors
- The innovative plastic housing system locks the cover in place. The amplifier can be tilted inside to enable quick and easy installation

MAP1..
MAP2..
MAP3..

Dimensions
105x60x95mm

MAP4..
MAP5..

Dimensions
105x60x120mm

Item	Code	Inputs	Input band	Gain dB	Output level dBµV	Gain adj. dB	Noise figure dB	Power consumption mA@12VDC	Mul. pack. Pcs
MAP108	223112	1	I+III	25	108	15	5	65	10
MAP107	223110	1	IV	24	108	15	5	60	10
MAP104	223111	1	V	25	108	15	5	60	10
MAP105	223120	1	UHF	33	108	15	6	85	10
MAP106(1)	223122	1	VHF+UHF	34	108	15	5	75	10
MAP109(2)	223160	1	VHF+UHF, V OUT	17	5 OUT x 92	15	4	65	10
MAP210	223124	2	VHF+IV, V	-2, 11	105	-, -	-, 5	40	10
MAP204(1)	223148	2	VHF, UHF	26, 24	108	15, 15	5, 5	65	10
MAP207	223147	2	III+UHF, UHF	21, 21	108	15, 15	8, 8	65	10
MAP208	223161	2	III+UHF	34, 35	108	15, 15	4, 3	80	10
MAP206(1)	223150	2	VHF, UHF	35, 36	108	15, 15	5, 5	75	10
MAP303	223130	3	VHF, IV, V	-2, -2, 12	105	-, -, -	-, -, 5	40	10
MAP310(3)	223145	3	FM, DAB, UHF	-1, 14, 14	108	-, -, -	4, 4	35	10
MAP311(3)	223146	3	FM, DAB, UHF	-1, 25, 24	105	-, 15, 15	4, 5	60	10
MAP312(1)	223142	3	VHF, IV, V	25, 24, 25	108	15, 15, 15	5, 6, 6	65	10
MAP313(1)	223152	3	VHF, UHF, UHF	24, 30, 30	108	15, 15, 15	5, 8, 8	80	10
MAP315(1)	223163	3	VHF, UHF, UHF	34, 40, 40	108	15, 15, 15	5, 8, 8	95	10
MAP400(1)	223141	4	VHF, VHF UHF, UHF	-4, 21, 19, 19	105	-, 15, 15, 15	-, 5, 8, 8	60	5
MAP401	223195	4	I+III, FM UHF, SAT	20,20,30,-2	104,104,108,-	15,15,15,-	5,5,6,-	85 (without LNB)	5
MAP500	223133	5	I, III, IV, V, UHF	16, 15, 10, 10, 11	108	-, -, -, -, -	4, 4, 8, 8, 8	40	5
MAP501	223137	5	I, III, IV, V, UHF	24, 24, 19 20, 20	108	15, 15, 15, 15, 15	4, 4, 8, 8, 8	60	5

(1) Able to filter the FM band
(2) 1 input and 5 outputs
(3) DAB = 210-240MHz
• In the standard models band IV includes channels E21-E35 and band V includes channels E39-E69

Note: Band III includes the DAB band, VHF includes the FM and DAB band, band IV and band V represent Group A and Group E bands.

Mast equipment

Mast amplifiers

MAP Interstage 12-24 Volt Series

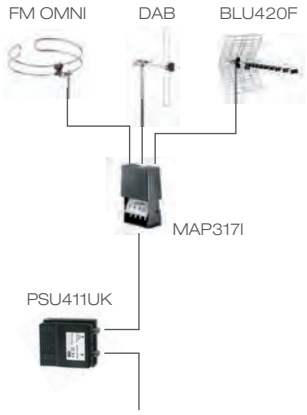
MAP amplifiers to mix and amplify signals from one or more aerial. Compatible with DTT signals in COFDM modulation. Adjustable plastic strap for mast mounting Ø 60mm max. Operating temperature: -10 to 55°C.

- The interstage adjustment enables the user to obtain a low noise figure even if the interstage signal is lowered
- Totally shielded in a metal frame and F connectors
- The innovative plastic housing system locks the cover in place. The amplifier can be tilted inside to enable quick and easy installation

Item	Code	Inputs	Input band	Gain dB	Output level dBµV	Gain adj. dB	Noise figure dB	Power consumption mA@12VDC	Mul. pack. Pcs
MAP110 New	223196	1	DAB+UHF	13	108	-	2.5	30	10
MAP115I(1) New	223197	1	DAB+UHF	27	108	15	2.5	60	10
MAP113I	223182	1	UHF	27	107	10	3	60	10
MAP213I	223185	2	FM+DAB, UHF	24, 33	107	10	5, 3	70	10
MAP223I(2)	223190	2	DAB, UHF	24, 33	107	10, 10	4, 2.5	60	10
MAP224I(3)	223191	2	DAB, UHF	24, 33	107	10, 10	4, 2.5	60	10
MAP212	223184	2	DAB, UHF	18, 27	107	-, -	4, 2.5	45	10
MAP317I	223187	3	I+FM, DAB, UHF	12, 24, 33	107	10, 10, 10	4.5, 4, 3	70	10
MAP316I	223186	3	FM+DAB, UHF, UHF	22, 20, 32	107	10, 10, 10	4.5, 4, 3	70	10

(1) Also available with a white case: MAP115IB - code 223198
(2) 12VDC
(3) 24VDC

MAP Series - Amplifiers



To combine off air UHF, FM
and DAB signals for multipoint distribution.

All diagrams are for illustration purposes only, actual connections may vary.

Mast amplifiers

MAK Series

MAK..

Dimensions
127x58x129mm

MAK amplifiers are used to mix and amplify signals from different aerials in small and medium installations.
The compact housing enables installation in confined spaces. Power requirement 12VDC. Adjustable gain 0-20dB on each input. Compatible with DTT signals in COFDM modulation. Adjustable plastic strap for mast mounting Ø 60mm max. Operating temperature: -10 to 55°C.

- Separate amplification for VHF and UHF bands
- Remote power supply adjustable on each input, 100mA max.
- Totally shielded in a metal frame with black plastic housing and equipped with F connectors

Item	Code	Inputs	Inputs/Gain dB						Noise figure	Output level	Power consump.	Pack.
		No.	B. I	B. III	B. IV	B. V	B. UHF	B. UHF	dB VHF/UHF	dBµV VHF/UHF	mA@12VDC	Pcs
MAK2510	223344	1	-	21	25	25	-	-	4/8	109/113	105	1
MAK2331	223343	3	21		-	-	23	23	4/8	109/112	85	1
MAK2332	223341	3	21		26	24	-	-	4/5	109/112	85	1
MAK2350	223340	5	21	19	22	22	22	-	4/8	109/112	85	1
MAK2650	223351	5	30	30	30	30	30	-	4/8	109/114	175	1

Note: Band III includes the DAB band, band IV and band V represent Group A and Group E bands.

Power supplies

PSU.. Series

PSU..

Dimensions
92x49x109mm

Totally shielded in a metal case to prevent any kind of interference.
Available with 12 or 24VDC output voltage. Isolation class: II. F connectors. Fully compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

- Switch mode power supply, high efficiency and low consumption
- Plastic case suitable for fixing to a table or wall
- Protected against accidental short circuits, operation is restored after a short circuit

Item	Code	Mains voltage input Vac, Hz	Mains voltage output VDC	Max. output current mA	RF bandwidth MHz	No. of outputs	Insertion loss dB	Pack. Pcs
PSU411UK	289559	220-240, 50-60	12	200	5-862	1	0.2	1
PSU412	289562	220-240, 50-60	12	200	5-862	2	4	1
PSU511*	289851	220-240, 50-60	12	200	5-2400	1	2	1

* DiSEqC pass-through available

Indoor electronic equipment

Indoor amplifiers

AFI Series

AFI..

Dimensions
120x97x43mm

A range of indoor amplifiers that enable the user to amplify and distribute TV and SAT signals to every outlet, guaranteeing optimum signal level throughout the system. Compact and elegant design. Fully compatible with DTT signals in COFDM modulation.

- Switch mode power supply, high efficiency and low consumption
- Screw driver included for gain and tilt adjustment
- All the adjustments are located under the panel which can be opened or completely detached
- Hidden slots for neat wall mounting
- Green LED indicates status ON

Item	Code	Inputs	Bands MHz	Gain (adj.) dB	No. of outputs	Noise figure dB	Output level dBµV	Pack. Pcs
AFI121T	223231	1	TV (47-862)	15	2	4	2 x 104	1
AFI112T	223230	1	TV (47-862)	20 (15)	1	4	108	1
AFI122T	223233	1 input with return path and TV band fixed tilt	TV (88-862) RC (5-65)	10@88MHz (15) 20@862MHz (15) -4	2	5.5	2 x 108	1
AFI313T	223236	3 inputs with separate adjustments	b.I+FM (47-108) DAB (174-300) b. UHF(470-862)	24 (15) 24 (15) 30 (15)	1	4.5	110	1
AFI123T	223235	1 input with separate V/U adjustment	VHF (47-300) UHF (470-862)	30 (15) 30 (15)	2	4.5	2 x 106	1
AFI123W	223237	1 TV + SAT input with separate adjustment	TV (47-862) SAT (950-2150)	TV 20 (20) SAT 20@950MHz 30@2150MHz (fixed tilt 10dB) (20)	2	TV: 5.5 SAT: 6.5	2 x 110	1

General features		
Power supply	Vac, Hz	220-240, 50-60
Isolation class		II
IN/OUT impedance	Ohm	75
IN/OUT connectors		F female
Band linearity	dB	±2
Max. power consumption	W	1.8, 2.5 (AFI123W)
Compliant to		EN50083-2, EN60065 Directives 89/336/CEE(EMC),73/23/CEE (low voltage)
Dimensions	mm	120x97x43
Operating temperature	°C	-10 to +55

Indoor modulators

MOD90 - MOD90R

MOD90
MOD90R

Multistandard double sideband indoor audio/video modulators. Output channel programmable via dip-switch. Stable frequency output due to PLL Synthesis and controlled via microprocessor. The modulator can be powered from the receiver or using an external power supply (9-24V/80mA max). Packaging 1 pc.

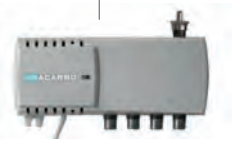
- This unit can be used to distribute signals from a receiver without a modulator
- Audio/video input connection via SCART socket and high output level (90dBµV)
- Adjustable audio/video inputs

Item Code		MOD90 280001	MOD90R 280002
Power supply	V	9-24	9-24
Connection	Type	Coaxial cable or Jack	Coaxial cable or Jack
Max. consumption	mA	80	80
Video signal level	Vpp	1	1
Audio signal level	Vrms	1	1
Bandwidth	MHz	5-2300	5-2300
RF output level	dBµV	75-90 (adjustable)	75-90 (adjustable)
Output channels		IF + E2-E12 + S1-S20 + E21-E70	IF + E2-E12 + S1-S20 + E21-E70
Available standards		PAL B/G, I, D/K, SECAM L, H	PAL B/G, I, D/K, SECAM L, H
Pass-through attenuation	dB	4 ± 1	4 ± 1
RF connectors	Type	F	F
A/V connectors	Type	Pass-through scart	RCA
Dimensions	mm	100x75x30	80x75x30
Operating temperature	°C	-10 to +40	-10 to +40

Indoor modulators

MOD90S

MOD90S



Multistandard double sideband audio/video stereo A2 modulator with Crystal PLL synthesizer to set up the output frequency.
The VHF and UHF frequency band and the high flexibility with multi-standard selection enable it to be used in many different installations.

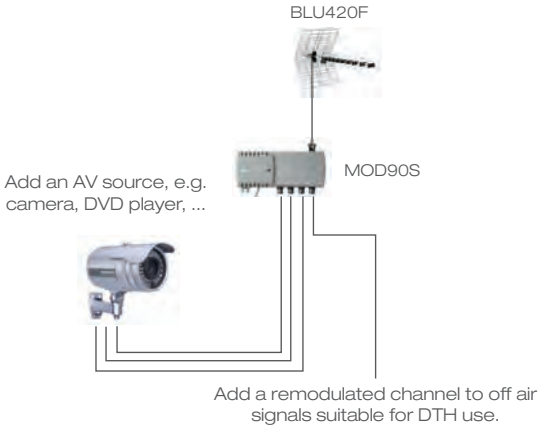
- PLL crystal frequency stabilisation

Item Code			MOD90S 287058
Composite video input	Frequency range	Hz-MHz	20 - 6
	Input level/Impedance	Vpp/Ohm	0.9 – 1.1 / 75
Audio input	Frequency range	Hz	20 - 15,000
	Input level/Impedance	mVpp/KOhm	775 (typ.) / 10
	Frequency deviation	kHz	±50
	Level adjustment	dB	±6 (programmable)
RF output	Modulated output level	dBµV	90 (typical)
	Output level adjustment	dB	20
	Available standards		B/G, D/K, H, I, SECAM L, M/N, (programmable)
	Output frequency range	MHz	47-68, 170-300, 470-862 (programmable)
Sub-carrier frequency	Sound 1	MHz	4.5, 5.5, 6.0, 6.5 (programmable)
	Sound 2	MHz	5.742
Video carrier frequency fine tuning		MHz	±2.25 in steps 0.25 (programmable)
Sound 1 sub-carrier frequency		dB	12/16
Sound 2 sub-carrier frequency		dB	21 ± 3
Amplitude modulation depth		%	81 (typical)
Weighted signal to noise ratio		dB	>55
Power consumption		W	2.5
Mains		Vac, Hz	230, 50
Operating temperature		°C	-10 to +40

Indoor electronic equipment

Indoor modulators

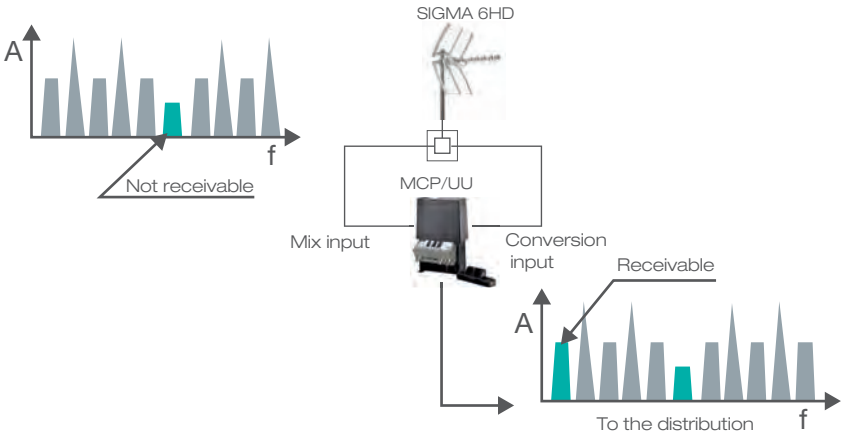
MOD90S - Indoor modulator



All diagrams are for illustration purposes only, actual connections may vary.

Mast channel processors

Mast channel processor



All diagrams are for illustration purposes only, actual connections may vary.

Mast channel processors

ICP/UU - MCP/UU New

Agile RF converters to process analogue and digital terrestrial channels used to move a channel from its original frequency to anywhere else in the UHF band. Input and output frequencies are set by means of a built-in dip-switch.
Due to the high SAW selectivity, it can also be used as a single channel filter. Level adjustment through an internal attenuator.
Input to mix all other existing channels from a different aerial.

- Dual conversion technology and SAW filter to distribuite adjacent channels and avoid spurious signals in the band
- Fully programmable through a dip-switch
- Wide dinamic input range
- Input MIX to combine the output signal from another aerial
- ICP/UU for indoor installations, MCP/UU for outdoor installations

Item Code		ICP/UU 223367	MCP/UU 223366
Inputs	No.	2	2
Input 1	Band	UHF	UHF
Input 2	Band	III + S + UHF	III + S + UHF
Output	Band	III + S + UHF	III + S + UHF
Input 1 conversion			
Input frequency	MHz	470 - 862	470 - 862
Channels	No.	21 – 69	21 – 69
Channel selection		Dip-switch	Dip-switch
Frequency step	MHz	8	8
Max. input RF level	dBuV	90	90
Gain	dB	15	15
Gain adjustment	dB	20	20
Phase noise	dBc/Hz	85 @ 10KHz	85 @ 10KHz
Maximum output level	dBuV	90 (IM3 -54dBc 2 tones)	90 (IM3 -54dBc 2 tones)
Maximum output level	dBuV	97 (IM3 -35dBc 2 tones)	97 (IM3 -35dBc 2 tones)
Input 2 MIX			
Bandwidth	MHz	47 – 862	47 – 862
Insertion loss	dB	-4	-4
General features			
Mains voltage	V, Hz	220-240~, 50-60	-
Power consumption	W	5	-
Supply voltage	Vdc	-	12 (from output connector)
Current consumption	mA	-	170
Operating temperature	°C	-5 to +55	-5 to +55
Compliant		EN60065: 2004-06, EN50083-2: 2006-06	EN50083-2: 2006-06

Multiband amplifiers and equaliser filters

Multiband amplifiers

MBJ Series

MBJ..

Multiband amplifiers to amplify and mix signals from several sources.
Two versions, one 112/113dBµV and the other 117dBµV, to be used in small and medium installations. Totally shielded metal housing, with plastic cover and F connectors. Compatible with DTT signals in COFDM modulation.

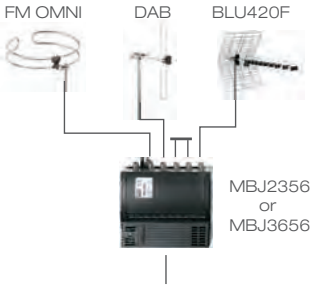
- Separate amplification for the VHF and UHF band
- All the adjustments are located under the cover to prevent unauthorised access
- Switch mode power supply, high efficiency and low consumption
- Remote power supply selectable on each input, 100mA max

Item	Code	Inputs	Inputs/Gain dB								Output level	Noise figure	Power cons.
		No.	FM+DAB E2-S30	B. I+FM+C	B. I	DAB	Group A	Group E	B. UHF	B. UHF	dBµV VHF/UHF	dB VHF/UHF	W
MBJ2510	223301	1	-	-	-	21	25	25	-	-	109/113	4/8	5
MBJ2320	223334	2	24	-	-	-	-	-	24	-	109/112	5/6	5
MBJ2331	223303	3	-	-	21		-	-	23	23	109/112	4/8	5
MBJ2332	223305	3	-	-	21		26	24	-	-	109/112	4/8	5
MBJ2350	223308	5	-	-	21	19	22	22	22	-	109/112	4/8	5
MBJ2356	223313	5	-	21	-	19	22	22	22	-	109/112	4/8	5
MBJ2620	223335	2	30	-	-	-	-	-	30	-	109/114	4.5/5.5	5
MBJ2640	223336	4(2 out)	-	25	-	25	-	-	30	30	106/110	4/8	5
MBJ2650	223316	5	-	-	30	30	30	30	30	-	109/114	4/8	5
MBJ3610. New	223339	1	-	-	-	33	-	-	33	-	110/117[1]	4/6	7
MBJ3620	223333	2	35	-	-	-	-	-	35	-	110/117	4/6	7
MBJ3631	223322	3	-	-	33		-	-	33	33	110/117	4/8	7
MBJ3650	223324	5	-	-	33	33	33	33	34	-	110/117	4/8	7
MBJ3656	223328	5	-	33	-	31	31	32	32	-	110/117	4/8	7

General features		
Remote power	VDC	12, 100mA total, available on any input
Gain adjustment	dB	0 to 20 on every input
Mains voltage	Vac, Hz	220-240, 50-60
Connectors		F female
Dimensions (l x h x w)	mm	127x58x128
Operating temperature	°C	-10 to 55

[1] Max. output level (IM3-35dBc 2 tones) DAB/UHF: 117/124dBµV
- In the standard models Group A includes channels E21-E35 and Group E includes channels E39-E69

MBJ Series - Multiband amplifiers for small and medium systems



For combining, amplifying and distributing UHF, FM and DAB in small and medium systems. Separate band 4 and 5 inputs for additional filtering/signals

All diagrams are for illustration purposes only, actual connections may vary.

Multiband amplifiers

MBX Series

Multiband amplifiers to amplify and mix signals from several sources. Totally shielded die-cast housing with F connectors. Separate VHF and UHF band amplification on the 119dBµV version, broadband push-pull amplification on the 124dBµV version. High gain and high output level enable the use of these products in medium and large installations. Cover fixed with safety screws. Compatible with DTT signals in COFDM modulation.

- Test point -30dB available on all products
- All the adjustments are located under the cover to prevent unauthorised access
- Switch mode power supply, high efficiency and low consumption
- Remote power supply adjustable on each input, 100mA max

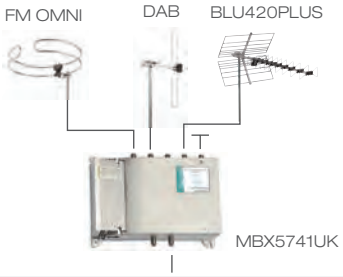
Item	Code	Inputs	Inputs/Gain dB									Output level (-60dB 3 eq. carr.)	Noise figure	Power cons.
		No.	VHF 47-238MHz E2-S30	FM 87.5-108 MHz	B. I	DAB	Group A	Group E	B. UHF	B. UHF	B. UHF	dBµV VHF/UHF	dB VHF/UHF	W
MBX5541	235002	4	-	31	30		-	-	30	30	-	116/119	4.5/7.5	8.5
MBX5550	235004	5	-	-	31(1)	31	30	30	30	-	-	116/119	4.5/8.5	8.5
MBX5551(2)	235015	5	-	34	34	34	-	-	32	32	-	116/119	5/8.5	8.5
MBX5710. New	235025	1	43	-	-	-	-	-	43	-	-	116/119(3)	4.5/6	8.5
MBX5720	235021	2	43	-	-	-	-	-	43	-	-	116/119	4.5/6	8.5
MBX5741UK	235012	1	40	-	-	-	-	-	40	40	-	116/119	4.5/7.5	8.5
MBX5750	235003	5	-	-	35(1)	38	43	43	43	-	-	116/119	4.5/8.5	8.5
MBX5752(2)	235014	5	-	35	B. I 36	B. III 38	-	-	30	42	42	116/119	5/8.5	8.5
MBX5851(2)	235016	5	-	34	34	34	-	-	44	44	-	116/119	5/8.5	8.5
MBX7741	235006	4	-	40	40		-	-	40	40	-	124	11	13.5
MBX7750	235005	5	-	-	40(1)	40	40	40	40	-	-	124	11	13.5
MBX0001	235000	Accessories kit composed of no. 2 plastic supports & mounting screws. This is used to install the MBX series leaving a space between the amplifer and the wall. Packaging 10 Pcs												

General features

Gain adjustment	dB	0-20 on every input	Power supply		Switch mode, isolation class: II
Linearity	dB	± 2	Impedance	Ohm	75
Isolation between inputs	dB	> 20	Connectors		F
Remote power	V	12, 100mA total, available on any input	Protection		IP20
Test point	dB	- 30	Dimensions (l x h x w)	mm	194x143x64
Mains voltage	Vac, Hz	220-240, 50-60	Operating temperature	°C	-10 to +55

(1) Ability to extend the band up to 108MHz using an internal jumper
(2) MBX0001 spacing kit included in the packaging
(3) Max. output level (IM3-35dBc 2 tones) DAB/UHF: 123/126dBµV
- In the standard models Group A includes channels E21-E35 and Group E includes the channels E39-E69

MBX Series - Multiband amplifiers for medium and large systems



For combining, amplifying and distributing UHF, FM and DAB in medium and large systems. Two UHF inputs for additional signals from a second source.

All diagrams are for illustration purposes only, actual connections may vary.

Multiband amplifiers and equaliser filters

Multiband amplifiers

AMP9202U

AMP9202U

Amplifier with 4 inputs and interstage gain adjustment to obtain a good noise figure even if the interstage signal is lowered.

- High gain in UHF, up to 47dB
- Switchable gain 37dB or 47dB
- Interstage attenuator
- Very low noise figure (also with gain adjustment)

Dimensions
283X125X74mm

Item	Code	Inputs	Gain dB				Noise figure	Output level	Power cons.	Packaging
			B. I+FM	DAB	B. UHF	B. UHF	VHF/UHF	VHF/UHF		
		No.					dB	dBµV	W	Pcs
AMP9202U*	AMP9202U	4	28	38	37/47	37/47	6/5.5	120/115	25	1

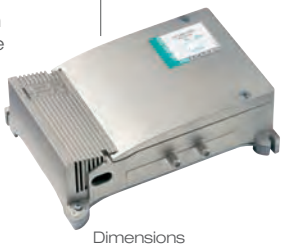
General features					
Gain adjustment	dB	0 to 20 interstage	Impedance	Ohm	75
Remote power supply	VDC-mA	12-50	Mains voltage	Vac, Hz	230, 50
Power consumption	W	25	Connectors		F
Isolation class		II	Operating temperature	°C	-5 to +50

* with UK plug

Headend amplifiers

AMP9764 - AMP9564

AMP9764



Mains powered amplifiers to amplify satellite signals with passive loop-through of the TV signal. To be used as a launch amplifier in IF systems or as a SAT line amplifier. They allow gain and slope adjustment in the SAT band.
Cover fixed with safety screws. No DC pass from the output to the inputs.
Compatible with DTT signals in COFDM modulation. For installation, supports are available (product MBX0001, see page 57) that leave a space of 19mm between the amplifier and the wall, allowing room for cables or the amplifier to be mounted in different positions.

- LNB power supply: 0V, 14V, 18V, 0/22Hz
- Low insertion loss in the RF band
- Switch mode power supply, high efficiency and low consumption
- All the adjustments are located under the cover to prevent unauthorised access

Dimensions
194x143x64mm

Item		Code	Inputs	Bandwidth	Gain	Gain adjustment	Tilt adjustment	Output level	Noise figure
			No.	MHz	dB	dB	dB	dBµV	dB
AMP9764		235053	2	940-2400 47-862	40 -2	0-20 -	15 -	125 -	10 -
AMP9564	New	228371	2	950-2150 5-862	37@950MHz, 43@2150MHz -2	0-20 -	10 -	120 -	<7 -

General features					
Test socket	dB	- 30	Flatness	dB	±2
Mains voltage	Vac, Hz	220-240, 50-60	Connectors		F
Power consumption	W	11	Protection		IP20, for internal use
Impedance	Ohm	75	Operating temperature	°C	-10 to +55

Programmable equaliser filters

FIL.. Series

FIL391000

FIL261000
FIL262000

FIL261000
Programmable 6 cluster equaliser filter for the UHF band. 6 clusters in the UHF band can be split over 2 different UHF inputs using 3 different modes.

FIL262000
Programmable 6 cluster equaliser filter for the UHF band. 2 UHF inputs with 3 clusters for each input and 2 outputs.

FIL391000
Programmable 10 cluster equaliser filter for the UHF band. 10 clusters in the UHF band can be split over 3 different inputs using 3 different modes.

- Each cluster can be programmed for the whole UHF band and can filter from 1 to 7 channels
- Fully agile, one unit can adapt to any changes
- Active mixing, no insertion losses
- Built-in control unit

Item Code		FIL261000 289804	FIL262000 289803	FIL391000 289805
No. of inputs		2	2	3
No. of outputs		1	2	1
No. of clusters		6	6	10
Antenna input		UHF1-UHF2	UHF1-UHF2	UHF1-UHF2-UHF3
Channels		21-69		
Bandwidth	MHz	470-862		
Cluster bandwidth	MHz	8-56 1 to 7 channels		
Cluster configuration		6 (UHF1) - 0 (UHF2) 5 (UHF1) - 1 (UHF2) 3 (UHF1) - 3 (UHF2)	3 (UHF1) - 3 (UHF2)	2 (UHF1) - 8 (UHF2) - 0 (UHF3) 2 (UHF1) - 7 (UHF2) - 1 (UHF3) 2(UHF1) - 5 (UHF2) - 3 (UHF3)
Gain	dB	5		
Attenuator	dB	30 (steps 1dB)		
Max. input level	dBµV	95		
Max. output level (IM3/-54dB)	dBµV	75		
Selectivity	dB	10@10MHz		
IN/OUT return loss	dB	>10		
OUT/IN DC pass		Programmable		
Mains voltage	Vac/VDC	230-240/5 Ø 2.1mm DC jack		
Power consumption	mA	300		500
Dimensions (l x h x w)	mm	157x142x65		222x142x65
Operating temperature	°C	-5 to +50		

Multiband amplifiers and equaliser filters

Programmable headends

SIG80.. Series

Agile multicluster headends to filter both analogue and digital channels. 10 programmable clusters to filter any channel in the UHF band. 2 or 3 UHF inputs, an input for band I + FM, an input for band III, an input for the VHF+UHF bands and one for the SAT band (SIG8010 only) enable all receivable signals to be mixed on a single output.

- Headend programmable on site: one single product can be used in several areas; quick adjustment of the headend if transmitter frequency changes
- Easy to install: power supply, programming unit, filters and amplifier included in one single product
- 10 clusters in the UHF band split over 3 different UHF inputs according to 3 different modes. Each cluster can filter from one to seven adjacent channels
- Wide dynamic range to equalise the signals: recovering large level differences between clusters is possible
- Manual or automatic level equalisation

SIG8008
SIG8009
SIG8010

Dimensions
265x220x95mm

SIG8011

Dimensions
231x185x53mm

General features		
Cluster selectivity	dB	10@10MHz
IN/OUT return loss	dB	>10
Test socket	dB	-30
Mains	Vac/VDC	220-240/15
Power consumption	mA	800@15VDC
Operating temperature	° C	-5 to +50
Noise figure (VHF, UHF, SAT)	dB	5, 6, 9

Item Code		SIG8008 - SIG8010 289484 - 289730						SIG8010 only
Inputs		B. I+FM	B. III+DAB	VHF+UHF	UHF1	UHF2	UHF3	SAT
Frequency	MHz	47-108	174-240	47-240/470-862	470-862	470-862	470-862	950-2150
No. of clusters	Mode 1, 2, 3	-	-	-	2, 2, 2	8, 7, 5	0, 1, 3	-
Gain (adj.)	dB	35 (20)	40 (20)	40 (20)	55 (30)	55 (30)	55 (30)	40 (20)
Max. input level	dBµV	80	80	80	80/105 selectable	80/105 selectable	80/105 selectable	90
Max. output level	dBµV	118	118	VHF: 118 UHF: 123	123	123	123	116
Remote power (max. 100mA total)		No	No	12V	12V	12V	12V	0-13-18V 300mA 0/22KHz

Item Code		SIG8009 289729				
Inputs		B. I+FM	B. III+DAB	UHF1	UHF2	UHF3
Frequency	MHz	47-108	174-240	470-862	470-862	470-862
No. of clusters	Mode 1, 2, 3	-	-	2, 2, 2	8, 7, 5	0, 1, 3
Gain (adj.)	dB	35 (20)	40 (20)	45 (30)	45 (30)	45 (30)
Max. input level	dBµV	80	80	80/105 selectable	80/105 selectable	80/105 selectable
Max. output level	dBµV	116	116	116	116	116
Remote power (max. 100mA total)		No	No	12V	12V	12V

Item Code		SIG8011 289842			
Inputs		B. I+FM	B. III+DAB	UHF1	UHF2
Frequency	MHz	47-108	174-240	470-862	470-862
No. of clusters	Mode 1, 2, 3	-	-	2, 2, 2	8, 7, 5
Gain (adj.)	dB	35 (20)	35 (30)	45 (30)	45 (30)
Max. input level	dBµV	80	80	105	105
Max. output level	dBµV	116	116	116	116
Remote power (max. 100mA total)		No	12V	12V	12V

Item	Code	
MEMOSIG80	289807	Programming key for SIG8008, SIG8009 and SIG8010. Enables the configuration to be copied from one headend to another. It can manage up to 16 different configurations.

Equaliser filters and programmable headends

BLU420PLUS

FIL261000

To filter 6 clusters from up to 2 UHF sources. To be used with additional amplification.

FM OMNI DAB SIGMA 6HD

SIG8011

To filter 5 clusters from up to 2 UHF sources, includes FM and DAB. Built in amplification.

All diagrams are for illustration purposes only, actual connections may vary.

Headends

Available in a complete range to fulfil all installation and signal distribution requirements.

Along with solutions provided by the 'plug and play' of the Compact Line, suitable for small and medium installations, Fracarro proposes the K series. This is a modular system that is suitable for medium and large installations and the highly professional Head Line system designed for large SMATV headends and CATV networks.

Now the Fracarro range of headends has been expanded with new products that guarantee innovative electrical performance and can be installed in a variety of configurations. These systems allow high selective and agile filtering of signals and the distribution of codified programs.

Compact headends

Compact Line Series
- SIG9506 - SIG9606 64-65

Mid level headends

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- DAB amplifiers 67
- 120dBμV output channel amplifiers 67
- Channel amplifiers with automatic gain control (AGC) 68
- Band amplifiers 68
- Channel amplifiers for DTT 68
- QPSK-COFDM FTA transmodulator 69
- Digital QPSK receiver with fullband DSB modulator 70
- QPSK receivers with vestigial sideband modulator 71
- COFDM receivers with vestigial sideband modulator 72-73
- Agile channel processor 74
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- Transponder amplified selective filter 76
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MATV headend with selective agile filters
- SAF Series 81-82

SMATV headend with 6 or 8 digital receivers with common interface
- Digiflex Series 83-84

High level headends

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- The professional solution 85
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- Interconnection module 97
- Accessories 97-98
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Compact headends

Compact Line Series

SIG9506 - SIG9606

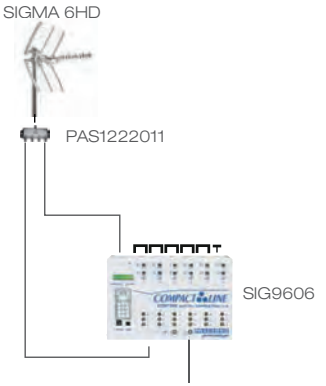
Compact headend for the reception and distribution of 6 digital terrestrial (SIG9606) or satellite (SIG9506) channels. It demodulates and remodulates them into the full RF band. Stereo versions are available (SIG9506S and SIG9606S). Compact headend includes 6 QPSK or COFDM receivers and 6 A/V modulators, 6-way combiner with existing TV signal mixing, power supply and programming unit with backlit display.
A/V outputs are available to connect external modulators. Earth bonding connection. Compliant to EN50083-2.

- Fullband modulator (174-446MHz + 470-862MHz)
- Easy to install, all items are included in one box
- SIG9506: each single receiver can generate 14 or 18V, 22KHz tone and DiSEqC 1.0, suitable to supply power to an LNB or to control multiswitch output
- SIG9606: 12VDC 100mA socket available to power pre-amplifiers through a power inserter (MPCCF)
- Software available to set up the headend using a PC (using product KRS-RJ, not included)
- Firmware can be upgraded on site (using product KRS-RJ, not included)
- Heat dissipation by natural convection, no fans needed, reducing maintenance costs

Installation examples

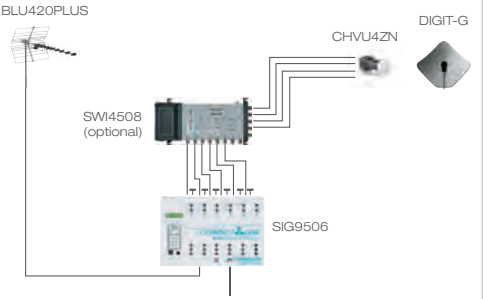
QPSK and COFDM headends

SIG9606 - COFDM Headend



Decodes and remodulates 6 terrestrial COFDM channels into the VHF or UHF band. Mix input to combine output with off air channels. Suitable for reintroducing original off air analogue channels.

SIG9506 - QPSK Headend



Decodes and remodulates 6 satellite channels into the VHF or UHF band. Mix input to combine output with off air channels. Suitable for reintroducing original off air analogue channels.

All diagrams are for illustration purposes only. Actual connections may vary.

Item Code			SIG9506.. SIG9506 (283126) - SIG9506S (283127)		SIG9606.. SIG9606 (283128) - SIG9606S (283129)	
Input SAT QPSK TV COFDM	Input frequency	MHz	950-2150		174-230 + 470-862	
	Input level	dBuV	45-80		35-80	
	Impedance	Ohm	75		75	
	Bandwidth	MHz	-		7 or 8	
	Input step tuning		1MHz		166.6KHz	
	Loop-through insertion loss	dB	-4 to +4		-1 to +5	
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal		Depends on the frequency and the level of the input signal	
	DiSEqC/switching controls		1.0 4 positions 0/14/18V 0/22KHz		-	
	LNB power supply		Max. 400mA@14V		12VDC 100mA available on external socket	
QPSK demodulation	AFC range		-2.5 to +2.5MHz		±285KHz (2K) ±142KHz (8K)	
	Symbol rate	Msymb/sec	2-35 (compatible SCPC/MCPC)		-	
	FEC		Auto		-	
COFDM demodulation	Carriers		-		2K, 8K	
	Modulation		-		QPSK, 16QAM, 64QAM	
	Hierarchy		-		High/low priority	
	Guard interval		-		1/4, 1/8, 1/16, 1/32	
	FEC		-		1/2,2/3,3/4,5/6,7/,8	
MPEG specifications	Video decoder		MPEG-2 Main profile, Main level (MP@ML)		MPEG-2 Main profile, Main level (MP@ML)	
	Audio decoder		MPEG-2 Layer I and Layer II		MPEG-2 Layer I and Layer II	
	Colour standard		PAL/SECAM/NTSC	PAL B/G	PAL/SECAM/NTSC	PAL B/G
	Video format		4:3, 16:9, pan scan, letter box		4:3,16:9, pan scan, letter box	
	Audio format		Mono, language 1, language 2	Stereo, dual sound, mono, auto	Mono, language 1, language 2	Stereo, dual sound, mono, auto
	Teletext		Yes		Yes	
A/V outputs	Video type		Composite		Composite	
	Video level	Vpp-Ohm	1-75		1-75	
	Max. audio level	Ohm-mVRMS	600-600		600-600	
	Band frequency	Hz	20-15000		20-15000	
TV modulator	Modulator		DSB (double sideband)		DSB (double sideband)	
	Standard		PAL (B/G ,D/K, I, N, H, SECAM L, NTSC M)	PAL B/G	PAL (B/G ,D/K, I, N, H, SECAM L, NTSC M)	PAL B/G
	Output frequency (channels)	MHz MHz	VHF: 174-446 (E5-S38) UHF: 470-862 (E21-E69)		VHF: 174-446 (E5-S38) UHF: 470-862 (E21-E69)	
	Output level	dBµV	100		100	
	Output level adjustment	dB	10 (independent for every channel)		10 (independent for every channel)	
	Audio level adjustment	dB	0-10		0-10	
	S/N weighted	dB	52 typ.		52 typ.	
	Output channel programming		By frequency (steps of 250KHz) or by channel		By frequency (steps of 250KHz) or by channel	
	No. of outputs		2 outputs (output and mix input)		2 outputs (output and mix input)	
	TV mixing input	MHz	47-862		47-862	
	TV mixing insertion loss	dB	2		2	
	Test signal		Black screen or white rows to be used for radio signal distribution		Black screen or white rows to be used for radio signal distribution	
General features	Input connectors		2 x F connectors (input + loop-through) for every channel		2 x F connectors (input + loop-through) for every channel	
	Output connectors		2 F connectors (output and mix input)		2 F connectors (output and mix input)	
	A/V output connectors		1 x RCA connector for every channel		3 x RCA connectors for every channel	
	Mains voltage	Vac, Hz	220-240, 50-60		220-240, 50-60	
	Power consumption	W	63	70	53	60
	Compliant		EN50083-3, EN60065		EN50083-3	
	Dimensions	mm	370x240x150		370x240x150	
	Operating temperature	°C	-10 to +45		-10 to +45	

Mid level headends

K Series

Modular systems for MATV/SMATV systems

The design targets of the K series are:

- Easy installation and maintenance
- Flexibility in the unit/headend composition (particularly for the integration between traditional TV, satellite TV and satellite IF)
- Solid and inexpensive without compromising performance
- Ready for future product ranges
- In compliance with all European and international regulations in force, including electromagnetic compatibility (mark, according to 2004/108/EC directive)

The main features of K series products are:

- All products are fully compatible with digital (terrestrial and satellite) programs
- Fixing to a standard DIN bar provides good mechanical strength and maximum density when assembling the headends. It also allows the use of a wide range of standard accessories available on the market
- Single voltage feed (12V, negative). A local power supply is provided where necessary. It is quick and easy to replace and keeps spare parts down to a minimum
- All modules have a solid mechanical structure. In particular, channel filters - where dimensional stability and surface conductivity are critical features - come in small die-cast small silver plated boxes
- For RF connections, all modules use F connectors with quick fit interconnection bridges
- Wide range of products dedicated to digital terrestrial and satellite signals. They perfectly integrate with existing headends, fulfilling any installation requirement
- Adjacent channel distribution is possible due to the channel filters selectivity together with the vestigial sideband (VSB) modulators used in satellite receivers
- Active filters for digital terrestrial have been developed using the KF and K120 active channel filters. These have been calibrated specially for the distribution of new COFDM modulated signals
- 19" rack installation possible
- Software can be upgraded on site using the KRS-RJ adaptor (not included)
- Programmable using a TPE or via FHM software (these products are not included)

K Series

Channel amplifiers

KF/..
KF/DAB
KF/DAB1
K120/DAB1
K120L/..

Channel amplifiers with five resonant circuits for VHF modules and four for UHF modules. Excellent selectivity allows the distribution of adjacent channels. The SMD amplification card ensures a high degree of reliability and accuracy. Not sensitive to static discharge and temperature change, stability has been taken into account during the design phase.
Operating temperature: –10° to +55°C. Packaging 1 pc.

Dimensions
32x129x86mm

Item	Code	Gain (adj.) dB	Selectivity dB Standard B/G* ACn-2	ACn-1	VCn+1	VCn+2	Return loss input dB	Return loss output dB	Max. output level dBµV	Noise figure typ. dB	Channels	Max. power consumption mA
KF/..	2701xx	9 (45)	35	5	9	35	10	15	93	7	E2-E4	20@12VDC
		9 (45)	-	-	-	-	15	15	90	4	FM	20@12VDC
		9 (45)	45	5	10	42	10	10	95	9	E5-E12	20@12VDC
		7 (30)	40	5	10	40	10	10	95	10	S11-S20	20@12VDC
		11 (35)	42	10	16	46	12	12	95	10	S21-S38	38@12VDC
		11 (35)	42	10	16	46	10	10	95	10	E21-E69	38@12VDC

K Series

DAB amplifiers

Channel amplifiers to filter and distribute the DAB (Digital Audio Broadcasting) band. Packaging 1 pc.

Item	Code	Gain (adj.) dB	Return loss input dB	Return loss output dB	Max. output level dBµV	Bandwidth MHz	Max. power consumption mA
KF/DAB	270058	14 (45)	10	10	100	217-230	20@12VDC
KF/DAB1	270060	12 (45)	10	10	100	195-223	20@12VDC
K120/DAB1	270278	45 (40)	10	10	120	195-223	180@12VDC

K Series

120dBµV output channel amplifiers

New

Channel amplifiers with five resonant circuits. Excellent selectivity allows the distribution of adjacent channels. The SMD amplification card ensures a high degree of reliability and accuracy. Not sensitive to static discharge and temperature change, stability has been taken into account during the design phase.
Operating temperature: from –10° to +55°C. Packaging 1 pc.

Item	Code	Gain (adj.) dB	Selectivity dB Standard B/G* ACn-2	ACn-1	VCn+1	VCn+2	Output level dBµV	Noise figure dB	Channels	Max. power consumption mA
K120L/..	2708xx	45 (40)	40	5	10	44	120	9	E5-E12	180@12VDC
		45 (30)	42	12	18	46	120	9	E21-E69	200@12VDC

***** It is possble to adjust the amplifier to a different standard on request.

Mid level headends

K Series

Channel amplifiers with automatic gain control (AGC)

K120A/..
KFB..
KF/..DT
K120L/..DT

Dimensions
32x129x86mm

Channel amplifiers with five resonant circuits for VHF and UHF bands.
Excellent selectivity allows the distribution of adjacent channels.
The automatic gain control gives a constant output level even with a varying input level. Essential in conditions where the signal reception level may vary and also useful in CATV networks with cascaded line amplifiers and for the inputs of fibre optic links. Output power: 120dBµV. Gain: 45dB. Max. output level: 120dBµV.
Operating temperature: -10° to +55°C. Packaging 1 pc.

Item	Code	Max. input level dBµV	Selectivity dB Standard B/G* ACn-2	VCn+1	Output level adj. dBµV	Dynamic AGC (max.) dB	Noise figure dB	Channels	Max. power consumption mA
K120A/..	2707xx	90	5	9	110-120	25	8	E2-E4	210@12VDC
		95	5	10	110-120	30	9	E5-E12	210@12VDC
		95	12	49	110-120	30	10	E21-E69	210@12VDC

K Series

Band amplifiers

These are provided with three channel traps to equalise the input channels or to eliminate unwanted channels. Each trap has 15dB attenuation and can be tuned by the installer.
The KFB4 and KFB5 can be placed alongside the KF/.. filters being careful not to tune to future channel requirements. They use the same mechanical structure as the K series, with F connectors and a self mixed output. Packaging 1 pc.

Item	Code	Bandwidth MHz	Gain (adj.) dB	Return loss input dB	Return loss output dB	Output level max. dBµV	Noise figure typ. dB	Max. power consumption mA
KFB3	270063	174-240	30 (20)	10	10	100	5	100@12VDC
KFB4	270054	470-590	13 (20)	10	15	100	4	130@12VDC
KFB5	270055	606-862	11 (20)	10	15	100	4	130@12VDC
KFBU	270064	174-240	30 (20)	10	10	100	5	100@12VDC

K Series

Channel amplifiers for DTT

Single channel amplified filters, KF/..DT and K120L/..DT for the distribution of digital terrestrial television signals. These modules can be used to update existing systems to receive DTT signals without disrupting the existing setup. Due to the high selectivity of the filter, the frequency response and the output level adjustment, it is simple to combine these modules with others giving a clean output signal. Each module has self-mixing and self-demixing capabilites, with low losses, simplifying the installation of the distribution system. Packaging 1 pc.

Item	Code	Gain dB	Bandwidth 7MHz CFr** ± 3.5MHz	CFr** ± 7MHz	Bandwidth 8MHz CFr** ± 4MHz	CFr** ± 8MHz	Max. output power dBµV	Noise figure dB	Channels	Absorption max. mA
KF/..DT	2701xxDT	9 (45)	7	30	-	-	90	9	E5-E12	20@12VDC
		11 (35)	-	-	7	25		10	E21-E69	38@12VDC
K120L/..DT	2708xxDT	45(40)	7	30	-	-	115	9	E5-E12	180@12VDC
		45(30)	-	-	8	33		9	E21-E69	200@12VDC

* It is possible to adjust the amplifier to a different standard on request.
** Central frequency

K Series

QPSK-COFDM FTA transmodulator

New

KSTT

Dimensions
40x200x155mm

All in one solution to receive all programs contained in a DVB-S transponder and create a DTT mux in the VHF or UHF band.

- Dynamic bit rate measurement for each program of the selected transponder and for the generated output COFDM multiplex
- Management and set up of all COFDM parameters
- ARP technology: automatic recovery procedure to protect the higher priority programs and guarantee continuity of service if bit rate overflow occurs
- Priority management of the programs included in the output multiplex
- LCN settings to adjust the channel number order in all TV sets connected to the headend

Item Code			KSTT 270641
Satellite front-end	Input frequency	MHz	950-2150
	Bandwidth	MHz	36
	Input level	dBµV	48-85
	Input step tuning	MHz	1
	LNB control		0/14/18VDC, 0/22KHz, DiSEqC 1.0
	Demodulation		QPSK (DVB-S)
	FEC		1/2, 2/3, 3/4, 5/6, 7/8, AUTO
	Symbol rate	Msymb/sec	2 - 40
	AFC range	MHz	-3 to +3
	Loop-through input loss	dB	2.5
COFDM modulation	Trasmission standard		DVB-T
	Bandwidth	MHz	6, 7, 8
	Carriers		2K, 8K
	Modulation		QPSK, 16-QAM, 64-QAM
	Guard interval		1/4, 1/8, 1/16, 1/32
	FEC		1/2, 2/3, 3/4, 5/6, 7/8
RF output	Output frequency	MHz	111-862
	Output channels		S2-E69
	Max. output level	dBµV	85
	Output level adjustment	dB	0-15
	RF mix input	MHz	47-862
	Output step tuning	KHz	10
	RF insertion loss	dB	1
	Flatness	dB	1
	Output MER	dB	36
	Spurious rejection	dB	>50
General features	Supply voltage	V	12
	Current absorption	mA	Max. 600 (without LNB) Max. 1000 (with LNB)
	Connectors	Type	F female
	Programming unit		TPE
	Compliant		EN50083-2, EN60065, EN50221, ETSI TS101699
	Operating temperature	°C	-10 to +55

K Series - Transmodulation from DVB-S to DTT

Remodulates multiple QPSK channels on to one COFDM multiplex. Typical application to allow extra foreign channels in a hotel system.

All diagrams are for illustration purposes only. Actual connections may vary.

Mid level headends

K Series

Digital QPSK receiver with fullband DSB modulator

KDF

Dimensions
74x188x112mm

QPSK digital satellite PAL receiver to receive all free-to-air satellite channels. Equipped with DSB multistandard modulator to distribute signals to all TV's within the installation
Possible to receive SCPC programs. Automatic PID updating.

- VHF output band modulator (E5-S38) + UHF (E21-E69)
- LNB power supply

Item Code			KDF 282646
Input SAT QPSK	Input frequency	MHz	950-2150
	Input level	dBµV	45-80
	Impedance	Ohm	75
	Bandwidth	MHz	36
	Input step tuning	MHz	1
	AFC range	MHz	-2.5 to 2.5
	Loop-through insertion loss	dB	-4 to +4
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal
	LNB power supply		0/12V, 22KHz, DiSEqC 1.1 (4 positions), max. 250mA
QPSK demodulation	Symbol rate	Msymb/sec	2 - 35 (compatible SCPC/MCPC)
	FEC		Auto
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)
	Audio decoder		MPEG-2 Layer I and Layer II
	Colour standard		PAL, SECAM, NTSC
	Video format		16:9, pan scan, letter box
	Audio format		Mono, language 1, language 2
	Teletext		Yes
TV modulator	Modulator		DSB (double sideband)
	Standard		PAL (B/G ,D/K, I, N, H, M), SECAM L, NTSC M
	Output frequency	MHz	174-446 + 470-862
	Channels		E5-S38 + E21-E69
	Output level	dBµV	90
	Output level adjustment	dB	15 by means of trimmer
	Audio level adjustment	dB	0-10
	S/N weighted	dB	52
	Output channel programming		By frequency (steps of 250KHz) or by channel
	No. of outputs		2 outputs (output and mix input)
	TV mixing input	MHz	47-862
	TV mixing insertion loss	dB	<2
	Test signal		Black screen or white rows. With radio signal distribution, a picture with the radio name is shown
General features	Connectors		F
	Programming unit		TPE
	Power supply	VDC	12
	Consumption	mA	Without LNB: 500, with LNB: 850
	Compliant		EN50083-2
	Operating temperature	°C	-10 to +55

FRACARRO

K Series

QPSK receivers with vestigial sideband modulator

KDSR
KDSR-M
KDSR-S
KDSR-AV

Digital processors for the reception of free-to-air programs transmitted with QPSK modulation. The fullband modulator covers the whole 47-862MHz band allowing the distribution of adjacent channels. Ideal for use in condominium and hotel headends where it is necessary to distribute the signal to a high number of wall outlets.

- Wideband modulator distributes signals from 47 to 862MHz
- Vestigial sideband modulator allows adjacent channel distribution
- LNB power supply, 14/18V 0/22KHz, DiSEqC 1.0
- RCA connectors with audio/video signal available on all versions
- Teletext management

Item Code			KDSR 270624	KDSR-S 270623	KDSR-M 270622	KDSR-AV 270621
SAT QPSK input	Input frequency	MHz	950-2150			
	Input level	dBµV	43-84			
	Impedance	Ohm	75			
	Bandwidth	MHz	36			
	Input step tuning	MHz	1			
	AFC range	MHz	±3			
	Loop-through insertion loss	dB	+4 to -6			
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal			
	LNB power supply		0/14/18VDC, 0/22KHz, max. 200mA@14VDC - DiSEqC 4 pos			
QPSK demodulation	Symbol rate	Msymb/sec	1-45			
	FEC		1/2,2/3,3/4,5/6,7/8, auto			
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)			
	Audio decoder		MPEG-2 Layer I and Layer II			
	Colour standard		PAL	PAL	PAL, SECAM, NTSC	PAL, SECAM, NTSC
	Video format		Normal, letter box, pan scan			
	Audio format		Mono, language 1, language 2	Mono, stereo, dual sound	Mono, language 1, language 2	Mono, language 1, language 2, stereo, dual sound
	Teletext		Yes			
RCA outputs	Video type		Composite			
	Video level		1Vpp - 75 Ohm			
	Max. audio level	KOhm-VRMS	10-0.5			
	Band frequency	Hz	20-15000			
TV modulator	Modulator		VSB mono	VSB stereo	VSB multistandard	-
	Standard		PAL B/G	PAL B/G	D/K, I, N, H, SECAM L	-
	Output frequency	MHz	47-862			-
	Channels		E2-E69			-
	Output level	dBµV	90			-
	Output level adjustment	dB	0-15 by means of TPE			-
	Audio level adjustment		Yes			-
	S/N weighted	dB	57			-
	Output channel programming		By frequency (steps of 250KHz) or by channel			-
	No. of outputs		2 outputs (output and mix input)			-
	TV mixing input	MHz	47-862			-
	TV mixing insertion loss	dB	<1.5			-
	Test signal		Black screen or white rows to be used for radio signal distribution			
General features	Input connectors		2 F connectors (input + loop-through)			
	Output connectors		2 F connectors (output and mix input)			-
	A/V connectors		3 x RCA			
	Programming unit		TPE			
	Power supply	VDC	12 ±5%			
	Consumption	mA	With LNB: 1010 without LNB: 730	With LNB: 1060 without LNB: 780	With LNB: 1010 without LNB: 730	With LNB: 670 without LNB: 390
	Compliant		EN50083-2			
	Dimensions	mm	40x200x155			
	Operating temperature	°C	-10 to +45			

Mid level headends

K Series

COFDM receivers with vestigial sideband modulator

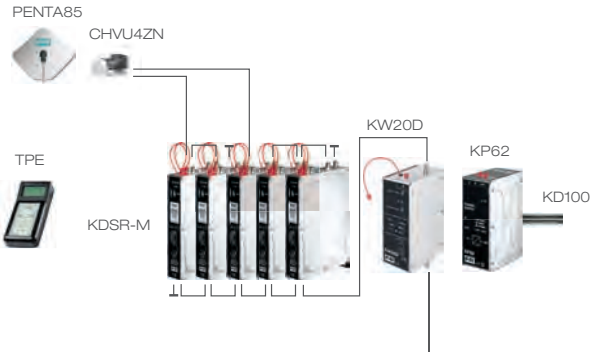
KDTR
KDTR-S
KDTR-M
KDTR-AV

DTT processors for the reception of free-to-air programs transmitted with COFDM modulation. The fullband modulator covers the whole 47-862MHz band allowing the distribution of adjacent channels. Ideal for use in condominium and hotel headends where it is necessary to distribute the signal to a high number of wall outlets.

- Wideband modulator distributes signals from 47 to 862MHz
- Vestigial sideband modulator allows adjacent channel distribution
- RCA connectors with audio/video signal available on all versions
- Possibility to send WSS signals for the auto-adjustment of the TV video formats
- Subtitle and teletext management

Item / Code			KDTR 270619	KDTR-S 270618	KDTR-M 270617	KDTR-AV 270616
TV COFDM input	Input frequency	MHz	174-230 + 470-862			
	Input level	dBµV	35-80			
	Impedance	Ohm	75			
	Bandwidth	MHz	7 or 8			
	Input step tuning	KHz	166.7			
	AFC range	KHz	±285 (2K) ±142 (8K)			
	Loop-through insertion loss	dB	+1.5 to -4			
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal			
COFDM demodulation	Carriers		2K , 8K			
	Modulation		QPSK, 16QAM, 64QAM			
	Hierarchy		High/low priority			
	Guard interval		1/4, 1/8, 1/16, 1/32			
	FEC		1/2,2/3,3/4,5/6,7/,8, auto			
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)			
	Audio decoder		MPEG-2 Layer I and Layer II			
	Colour standard		PAL	PAL	PAL, SECAM, NTSC	PAL, SECAM, NTSC
	Video format		4:3, 16:9, letter box, pan scan			
	Audio format		Mono, language 1, language 2	Mono, stereo, dual sound	Mono, language 1, language 2	Mono, language 1, language 2, stereo, dual sound
	Teletext		Yes			
RCA outputs	Video type		Composite			
	Video level	Vpp-Ohm	1-75			
	Max. audio level	KOhm-VRMS	10-0.5			
	Band frequency	Hz	20-15000			
TV modulator	Modulator		VSB mono	VSB stereo	VSB multistandard	-
	Standard		PAL B/G	PAL B/G	D/K, I, N, H, SECAM L	-
	Output frequency	MHz	47-862			-
	Channels		E2-E69			-
	Output level	dBµV	90			-
	Output level adjustment	dB	0-15 by means of TPE			-
	Audio level adjustment		Yes			-
	S/N weighted	dB	57			-
	Output channel programming		By frequency (steps of 250KHz) or by channel			-
	No. of outputs		2 outputs (output and mix input)			-
	TV mixing input	MHz	47-862			-
	TV mixing insertion loss	dB	<1.5			-
	Test signal		Black screen or white rows to be used for radio signal distribution			
General features	Input connectors		2 F connectors (output + loop-through)			
	Output connectors		2 F connectors (output and mix input)			-
	A/V connectors		3 x RCA			
	Programming unit		TPE			
	Power supply	VDC	12 ±5%			
	Consumption	mA	670	700	670	330
	Compliant		EN50083-2			
	Dimensions	mm	40x200x155			
	Operating temperature	°C	-10 to +45			

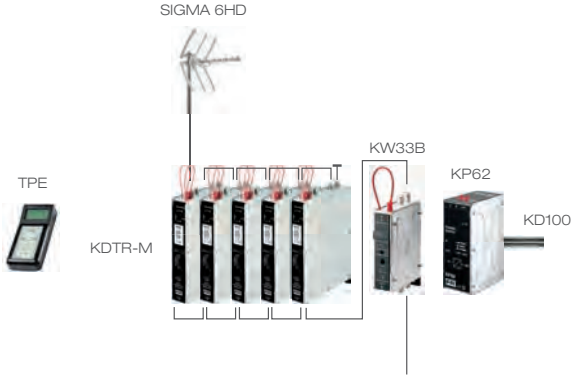
K Series - For the reception of free-to-air programs via QPSK modulation



To decode and remodulate a single QPSK channel in to the VHF or UHF band. The standard analogue off air channels can be reintroduced into an SMATV system.

All diagrams are for illustration purposes only. Actual connections may vary.

K Series - For the reception of free-to-air programs via COFDM modulation



To decode and remodulate a single COFDM channel in to the VHF or UHF band. The standard analogue off air channels can be reintroduced into an SMATV system.

All diagrams are for illustration purposes only. Actual connections may vary.

Mid level headends

K Series

Agile channel processor **New**

KCPN

Dimensions
40x200x155mm

Fully agile RF channel processor to process and convert terrestrial digital and analogue channels. Due to the high selectivity, it can also be used as a filter. AGC (automatic gain control) facility to maintain a constant output level regardless of the fluctuation of the input signal.

- Dual conversion technology and dual SAW filter to distribuite adjacent channels and avoid spurious signals in the band
- Single product to convert a channel within 47-862MHz
- Perfect management when conversion of either adjacent digital or strongly unequalised channels is required
- Wide dynamic input range to guarantee good reception of programs even when signals are weak
- Mixing output to combine the output signal from other K Series modules with very low insertion loss (<1dB in the whole RF band)

Item Code			**KCPN** 282647
TV Standard:	Digital		DVB-T – DVB-C
	Analogue		PAL B/G/I/L/D/K
Input frequency		MHz	47-862
Bandwidth		MHz	7–8
Input level	Digital	dBµV	45–80
	Analogue	dBµV	55–90
Loop-through input gain		dB	1
Input step tuning		KHz	125
Output frequency		MHz	47–862
Max. output level	Digital	dBµV	85,
	Analogue	dBµV	92
Output level adjustment		dB	0–15
TV mixing input		MHz	5–862
TV mixing insertion loss		dB	<1
Noise figure		dB	5
Phase noise		dBc/KHz	-85@10
Power supply		VDC	12
Consumption		mA	Max. 500
Connectors		Type	F female
Compliant			EN50083-2:2008-03
Operating temperature		°C	-10 to +55

K Series - Agile channel processor

To convert an analogue/digital channel to another frequency. Can be used with multiple units to convert all off air channels.

All diagrams are for illustration purposes only. Actual connections may vary.

K Series

Vestigial sideband modulators

KM
KMS
KMM

Dimensions
40x200x155mm

Audio video vestigial sideband modulators.
Three versions are available: PAL B/G mono, PAL B/G stereo and multistandard mono.

- High output C/N
- Audio and video input adjustment using a trimmer

Item Code			KM 270630	KMS 270631	KMM 270632
Input		No.	3 x RCA (cinch)		
Output		No.	2 F connectors (output + mix input)		
Video input	Impedance	Ohm	75		
	Input level	Vpp	0.7 – 1.2		
Audio input	Impedance	KOhm	10		
	Input level	VRMS	0.25 – 0.75		
Standard			PAL B/G mono	PAL B/G stereo	Multistandard N, H, D, K, I, L
Audio carrier frequency	B/G mono	MHz	5.5	-	-
	B/G stereo		-	-	-
	Left carrier	MHz	-	5.5	-
	Right carrier	MHz	-	5.74	-
	L, D/H	MHz	-	-	6.5
	I	MHz	-	-	6
	N	MHz	-	-	4.5
Video/audio power carrier ratio	N	dB	-	-	10
	H	dB	-	-	14
	I	dB	-	-	14
	D/K	dB	-	-	13
	L	dB	-	-	8
	B/G mono	dB	14	-	-
	B/G stereo	dB	-	14 (left c.) 21 (right c.)	-
Modulation with audio input 1KHz, 0.5VRMS	B/G	KHz	49	49	-
	N (FM)	KHz	-	-	<42
	H	KHz	-	-	44
	I, D/K (FM)	KHz	-	-	>47
	L (AM)	KHz	-	-	80%
Modulation depth for 1Vpp video input	D/K, I, B/G		80% typ.		
	L		-	-	90–97%
Output frequency (channels)		MHz	47–862 (E5-E69)		
Output channel programming			By frequency (steps of 250KHz) or by channel		
Channel standard			B/G Europe, PAL I UK, L France, B Australia		
Max. output level		dBµV	90		
Output level adjustment		dB	0–15 by means of TPE		
Insertion loss		dB	<1.5		
C/N on channel		dB	>57		
Spurious rejection		dB	57		
General features	Mains voltage	VDC	12		
	Consumption	mA	400	500	400
	Power consumption	W	4.8	6	4.8
	Compliant		EN50083-2		
	Operating temperature	°C	-10 to +55		

Mid level headends

K Series

K Series - Audio video VSB modulators

Remodulates an AV source to a channel in the VHF or UHF band.

All diagrams are for illustration purposes only. Actual connections may vary.

K Series

SAT amplifiers + TV mixer

KX125
KX125NT
KX125E

Amplifies satellite IF (950-2150MHz) whilst mixing terrestrial TV frequencies of 47-862MHz. Overcomes the higher losses experienced when distributing SAT IF.

Dimensions
32x129x86mm

Item	Code	Input frequency MHz	Gain (adj.) dB 950MHz	Gain (adj.) dB 2150MHz	Max. output level dBµV	Noise figure dB	Max. power consumption mA	Packaging Pcs
KX125	282104	950-2150 47-862	38 (20)	44 (20) -1	125 -	6 -	310@12VDC	1
KX125NT	282105	950-2150 47-862	35 (20) -1		125 -	6 -	280@12VDC	1
KX125E	282106	950-2150 47-862	38 (20)	44 (20) -1	125 -	6 -	310@12VDC	1
	With 12VDC available in the SAT input to power an LNB							

K Series

Transponder amplified selective filters

KFT

The KFT module selects and amplifies a DVB-S transponder between 950 to 2150MHz. The filter uses K series housing with F connectors and is self-mixing both for input and output.

Dimensions
32x129x86mm

Item	Code	Input frequency MHz	Gain (adj.) dB	Bandwidth MHz	Output level dBµV	Max. power consumption mA	Packaging Pcs
KFT/.	282614	950-1450	18 (20)	33	100	105@12VDC	1
KFT/..	282615	1451-1700	18 (20)	33	100	105@12VDC	1
KFT/...	282616	1701-2150	18 (20)	33	100	105@12VDC	1

K Series

Programmable IF-IF DVB-S2 converter

KIF-S2

Dimensions
32x129x86mm

Fully agile IF-IF converter that enables the selection of a transponder from 950-2150MHz and converts it to a free position in the same band. Usable as a SAT filter, by setting the same input and output frequency.
DVB-S2 transponders are fully compliant with DVB-S and analogue transponders.

- IF-IF converter compatible with DVB-S2 standard, programmable using a TPE
- SAW filter technology guarantees high quality in conversion and distribution of adjacent transponders
- The converter is provided with AGC to keep the output level constant
- Very low phase noise makes it particularly suitable for HD
- Remote power supply programmable via software

Item Code			KIF-S2 282589
Inputs			1 SAT input and 1 loop-through output to other modules
Outputs			1 SAT output and 1 mix-in input to mix the signal coming from other modules
Input and output frequency SAT		MHz	950 – 2150
Supported SAT standard			Digital: DVB-S QPSK Digital: DVB-S2 QPSK 8PSK Analogue: FM
Input level		dBµV	55-90
Max. output level		dBµV	90
Output level adjustment		dB	0-15
Bandwidth		MHz	36 or 27
Loop-through insertion loss		dB	<1
Mix in insertion loss		dB	<1
Return loss		dB	>10
LNB power supply		VDC - mA	12 - 250 max. - programmable via TPE
General features	Connectors	Type	F female
	Mains voltage	VDC	12
	Consumption	mA	300 (550 when LNB power supply is set)
	Operating temperature	°C	-10 to +55

Mid level headends

K Series

Final push-pull amplifiers

Broadband launch amplifiers with push-pull technology allows the amplification of the whole 47-862MHz band, including the S band. With one input and one output, the KW series are used to amplify the signal from KF filters or other modules (receivers, modulators, etc).
The KW35E passes the return channel (5-30MHz).

Item	Code	Frequency range MHz	Gain (adj.) dB	Slope adjustment dB	Max. output level dBµV	Noise figure typ. dB	Max. power consumption mA	Packaging Pcs
KW33B	270050	47-862	34 (20)	-	116	8	300@12VDC	1
KW33C	270053	47-862	32 (20)	0-20	120	9	510@12VDC	1
KW44C	270051	47-862	44 (20)	0-20	120	8	550@12VDC	1
KW20D	270049	47-862	20 (20)	0-20	125	6	550@12VDC	1
KW35D	270061	47-862	35 (20)	0-20	125	5	640@12VDC	1
KW35E	270059	5-30 - 47-862	35 (20)	0-20	129	6	830@12VDC	1

K Series

Power supplies

The power supply units contain switching technology to ensure the best performance and reliability.
They are protected from both momentary and long term overloads. Isolation: class II.
Operating temperature: -10°C to +55°C.

Item	Code	Mains voltage Vac, Hz	Power consumption W	Output voltage V	Max. current A	Packaging Pcs
KP15	270018	220-240, 50-60	23	12	1.5	1
KP35	270017	220-240, 50-60	55	12	3.5	1
KP62	270019	220-240, 50-60	87	12	6.2	1

K Series

Accessories

KA400

KA600
KA800

Cabinets specially designed for easy installation and maintenance of MATV/SMATV headends.

- Perforated back for attaching the DIN bar. Thickness: 1.5mm
- Single structure (sides plus back) to be fixed at the rear
- Door with lock

Item	Code	Length mm	Height mm	Width mm	Packaging Pcs
KA400	270001	390	340	170	1
KA600	293433	600	500	180	1
KA800	293434	800	500	180	1

Item	Code	Description	Packaging Pcs
KD100	289539	**DIN BAR (35x15x1.5mm) galvanised** Length 1m, used for installing K series modules	20
TPE	282733	**Programming unit** Programming unit with numeric keypad and graphic display	1
CVDC50	280376	**12V cable feed** Length 50cm	1
KRS-RJ	282732	**USB-RJ45 adapter**	1

K Series

Accessories

Plug-in F connector bridges
These are shielded quick push on connectors. For connections between an active splitter and receiver modules as well as between the active splitter and self-mixing line of the output signal.

- Shielded

Item	Code	Length mm	Compatible with	Packaging Pcs	
KRF15	289537	150	KDTR, KDSR, KCPN, KM, KDF, KSTT	20	
KRF45	289538	450	KW and KX125, KSTT	10	

Mid level headends

Serie K

Accessories

Plug-in F connector bridges

These are shielded quick push on connectors. For connecting modules.

• Shielded

Item	Code	Length mm	Compatible with	Packaging Pcs	
KPR37	289485	37	KF, K120L, K120A, KIF-S2, KFT, KFB4, KFB5, KFBU, KFB3	20	
KPR41	289486	41	Headline modules, KF, K120L, K120A, KIF-S2, KFT, KFB4, KFB5, KFBU, KFB3	20	
KPR52	289491	52	KDTR, KDSR, KCPN, KSTT	20	

Plug-in F connector bridges

These are shielded twist on connectors. For connecting modules.

• Shielded

Item	Code	Length mm	Compatible with	Packaging Pcs	
KPN42	289245	42	KF, K120L, K120A, KIF-S2, KFT, KFB4, KFB5, KFBU, KFB3	10	
KPN51	289244	51	KDTR, KDSR, KCPN, KSTT	10	

Broadband pre-amplifiers

To be used to increase weak signals before entering a KF amplifier or K120 filter.
As they are easy to connect, they are particularly suitable for use with the MBX and K series. Metal housing.
1 transistor. V.S.W.R. < 2.
With socket and 30cm cable with D.C. plug. Input R.F. only.
Powered via output connector or D.C. plug.

Item	Code	Band inputs	Gain dB	Noise figure dB	Max. output level dBµV	Bandwidth MHz	Max. power consumption mA	Packaging Pcs	
MP04AF	236505	IV	17	3	108	470-590	20	10	
MP05AF	236506	V	14	4	108	606-862	20	10	
MP45AF	236507	UHF	15	4	108	470-862	20	10	
MP13AF[1]	236504	VHF	20	3	108	47-300	25	10	
MPCCF	236508	**D.C. Inserter** For supplying D.C. to pre-amplifiers. With plug, socket and 20cm lead for D.C. Ø 2.3mm. With F connector							

(1) With FM trap filter.

MATV headend with selective agile filters

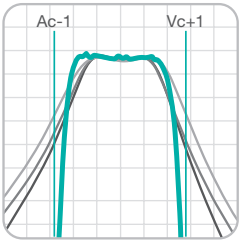
SAF Series

SAF12U **SAF6U1V**
SAF7U **SAF11U1V**
SAF-CA

Dimensions
439x196x105mm

MATV headend with selective agile filters to distribute and filter analogue and digital TV signals.
Due to its flexibility and easy programming, SAF is particularly suitable when used for frequency changes or if new transmitters are switched on. The headend can easily be reprogrammed at any time to change the frequency and the type of the filter (analogue or digital) without having to change the product.
The headend contains up to 12 filters and has 4 inputs, one dedicated to the FM band. Each filter can be connected in varying combinations to the 3 inputs.
The UHF modules are equipped with a SAW filter allowing them to be highly selective and adjacent channel rejection is over 45dB (see diagram below). It also enables the conversion of channels received from other frequencies.
SAF headends, available in 4 models, can be used in any installation where highly selective filtering and excellent signal quality are required. They can also be used to convert on to available frequencies the programs received off air from different aerials.

- Agile filters enable the headend to be used in different installations and can easily be reprogrammed for frequency changes or if new transmitters are switched on
- UHF modules have a SAW filter so they are highly selective (adjacent channel rejection >45dB) with good channel flatness of <1dB and AGC to keep the output level stable
- High gain of up to 50dB and high output level of 109dBµV for all analogue channels, 99dBµV for all digital multiplexes in the UHF band
- Compact housing - one unit contains a power supply, signal distributing matrix, VHF or UHF filters (12 filters for SAF12U and SAF11U1V versions, 7 filters for SAF7U and SAF6U1V versions) and final amplifier. Single filter modules are available individually packed, products SAF-U and SAF-V, to be added to existing headends
- 3 inputs can be used flexibly by all 12 modules due to a signal distributing matrix
- Remote power supply for mast amplifier available on any input, 12 or 24V, selected by means of a dip-switch
- The UHF modules can be used as filters or converters to solve frequency collision
- VHF filter based on tracking filter technology, to cut unwanted carriers in band III
- Offset adjustment from +500 to -500KHz to change filtering to greatly reduce either the upper or lower adjacent channel
- Programmable using a TPE programmer or PC with FHM (Fracarro headend management) programmable software
- Wall or 19" rack installation
- Independent output level adjustment for each channel
- Heat dissipation by natural convection, no fans required, reducing maintenance costs



SAF
Resonant circuits

SAF FILTER COMBINATIONS

Item	No. of UHF filters	DAB	FM
SAF12U	12	No	Yes
SAF11U1V	11	Yes, through VHF filter	
SAF7U	7	No	
SAF6U1V	6	Yes, through VHF filter	

Mid level headends

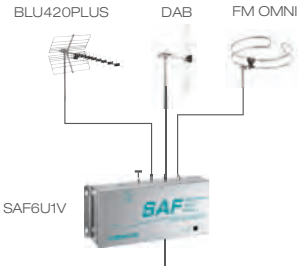
Item Code			SAF12U - SAF7U - SAF11U1V - SAF6U1V 272001 272003 272004 272006
Frequency	TV input	MHz	174-230 + 470-862
	FM input	MHz	87-108
	TV output	MHz	87-108, 174-230, 470-862
Connectors	Inputs		4 F connectors (In 1, In 2, In 3, FM)
	RF output		2 F connectors (RF out/Test-30dB)
	Programming		1 RJ45 connector
Input signal	Impedance	Ohm	75
	Analogue channels - input level	dBµV	63-83
	Digital channels - input level	dBµV	53-73
	Max. input level for all inputs	dBµV	92 (over the whole band)
	FM band - input level	dBµV	40-80
	Return loss	dB	10
VHF and UHF filter characteristics	Frequency		UHF: 470-862MHz, VHF: 174-230MHz
	Filter bandwidth		UHF: 8MHz, VHF: 15MHz
	Filter selectivity (referring to B/G PAL standard)	dB	Audio carrier N/Video carrier UHF: N+1 45dB, VHF: N+2 ≥12dB Video carrier N/Audio carrier UHF: N-1 45dB, VHF: N-2 ≥12dB
	Flatness	dB	UHF: ±1
	Dynamic AGC	dB	UHF: 20
	Level adjustment	dB	UHF: 10 (1dB steps), VHF: 20 (2dB steps)
	Frequency programming steps	KHz	UHF: 250
	Offset	KHz	UHF: ±250, ±500
	Output frequency accuracy	KHz	UHF: <20 (isofrequecy conversion), <70 (channel conversion)
FM filter characteristics	Frequency	MHz	87-108
	Level adjustment	dB	20 (1dB steps)
	Gain	dB	20-40 adj.
	Selectivity	dB@MHz	50@174
Output signal	Max. output level (analogue channels)	dBµV	109 per channel
	Max. output level (digital channels)	dBµV	99 per channel
	Max. output level (FM band)	dBµV	99
	Test output	dB	-30
	Noise figure	dB	10
	MER of DTT signal	dB	25 (with input MER >30dB)
	Spurious rejection	dB	54
	Standard		PAL B/G, PAL I, SECAM L, PAL B/H
General features	Programming unit		TPE
	Mains voltage	Vac, Hz	220-240, ~ 50-60, Class: II
	Max. consumption	W	70
	Remote power supply for mast amplifier	V	12/24 on each TV input, selectable by means of dip-switch
	Max. remote power supply current	mA@V	Max. 200@12, 100@24
	Input demixing		Modules 1-4: antenna 1,2,3 Modules 5-8: antenna 1,2 Modules 9-12: antenna 1
	Compliant		EN50083-2, EN60065
	Operating temperature	°C	-10 to +55

ACCESSORIES

Item	Code	Description
SAF-U	272002	UHF programmable filter UHF filter individually packed, for installation in SAF headends
SAF-V	272005	VHF programmable filter VHF filter, individually packed, for installation in SAF headends
SAF-CA	272007	SAF housing with power supply

Selective agile filter headend

To filter out unwanted channels. Can be used to remove analogue channels. SAF can also be used to convert channels from one frequency to another in the UHF band.



All diagrams are for illustration purposes only. Actual connections may vary.

SMATV headend with 6 or 8 digital receivers with common interface

Digiflex Series **New**

SIG9706CI-M
SIG9708CI-M
SIG9806CI-M
SIG9808CI-M

Dimensions
430X305X200mm

SMATV headend for the reception and distribution of 6 or 8 digital terrestrial or satellite channels. Demodulates the digital channels and remodulates them into the RF band (47-862MHz). The front panel is removable with a lock to avoid common interface modules or cards being removed. Wall mount or 19" cabinet installation.

- Easy to install, included in one box: power supply, 8 QPSK (SIG97xxCI) or COFDM (SIG98xxCI) receivers with common interface slot, 8 A/V vestigial sideband modulators, wideband (47-862MHz) with audio stereo, combiner to mix 8 RF channels and final amplifier 98dBµV per channel
- Two A/V input/output connectors are available to connect external devices to two receivers
- Master/slave setting available to share one smart card among several receivers, to decrypt several programs with only one subcription (if allowed by the pay-TV service provider)
- SIG97xxCI: each receiver can generate 14 or 18V, 22KHz tone and DiSEqC 1.0, suitable to feed an LNB or control multiswitch output
- SIG98xxCI: remote power supply from each receiver to power a pre-amplifier (max. 400mA@12V)
- It is possible to send WSS signals for auto-adjustment of TV video formats
- Heat dissipation by natural convection, no fans required, reducing maintenance costs
- Software available to set the headend using a PC
- Subtitle and teletext management

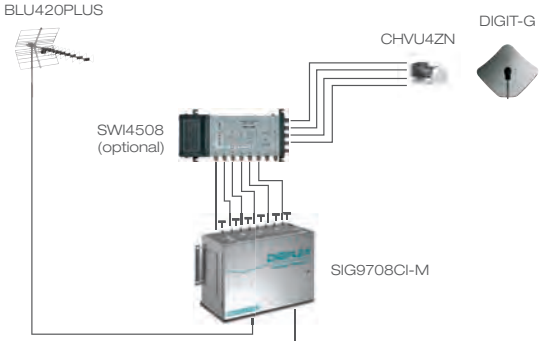
Item Code			SIG9706CI-M 283149	SIG9708CI-M 283150	SIG9806CI-M 283152	SIG9808CI-M 283153
Modules		No.	6	8	6	8
Front-end QPSK	Input frequency	MHz	950-2150		-	
	Bandwidth	MHz	36		-	
	Input level	dBµV	43-84		-	
	Input step tuning	MHz	1		-	
	DiSEqC		0/14/18VDC, 0/22KHz DiSEqC 1.0		-	
	Demodulation		QPSK compliant ETS 300421		-	
	FEC		Auto		-	
	Symbol rate	Msymb/sec	1 - 45 (compatible SCPC/MCPC)		-	
Front-end COFDM	Input frequency	MHz	-		174-230, 470-862	
	Bandwidth	MHz	-		7 or 8	
	Input level	dBµV	-		35-80	
	Input step tuning	KHz	-		166.7	
	Demodulation		-		ETS 300744	
	FEC		-		1/2, 2/3, 3/4, 5/6, 7/8, AUTO	
	Carriers		-		2K, 8K	
	Modulation		-		QPSK, 16-QAM, 64-QAM	
	Guard interval		-		1/4, 1/8, 1/16, 1/32	
	AFC range	KHz	-		±285 (2K), ±142 (8K)	
Modulation	Modulator		Vestigial sideband			
	Standard		PAL I ,D/K,N, H , M, SECAM-L			
	Output frequency	MHz	47-862			
	Output channels		E2-E69			
	Max. output level per channel	dBµV	98			
	Output level adjustment	dB	0-10		0-15	
	Weighted C/N	dB	>56			
	TV mixing input	MHz	47-862			
	TV mixing insertion loss	dB	4		2	
Video decoder	Video decoder		MPEG-2, main level @ main profile			
	Video format		Pan scan, letterbox, combined, 16:9			
Audio decoder	Audio decoder		MPEG-2 Layer I and Layer II			
	Audio format		Stereo, dual sound			
General features	Mains voltage ~	V, Hz	220–240, 50-60			
	Power consumption	W	130		110	
	Connectors	Type	F female			
	A/V connectors		SUB-D 9 pin			
	Remote power supply	mA	-		400 @ 12V	
	Operating temperature	°C	-10 to +45			
	Compliant		EN50083-2, EN60065, EN50221, ETSI TS101699			

Mid level headends - High level headends

ACCESSORIES

Item	Code	Description
SIG9708PS	283144	Power supply for installation in Digiflex headends
SIG9708MR-M New	283151	QPSK CI receiver for installation in Digiflex headends
SIG9708CA	283142	Digiflex housing with power supply
SIG9808MR-M New	283154	COFDM CI receiver for installation in Digiflex headends
SIG9808LT	283147	Loop-through amplifier

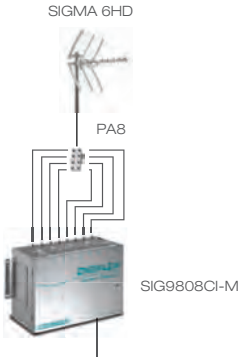
SIG9708CI-M - QPSK headend to distribute 8 additional channels into a hotel system



Decodes and remodulates up to 8 satellite channels. Capable of adjacent channel allocation with VSB modulators and mixing off air channels. Typical application to distribute 8 additional channels into a hotel system from a satellite source.

All diagrams are for illustration purposes only. Actual connections may vary.

SIG9808CI-M - COFDM headend to distribute 8 additional channels into a hotel system



Decodes and remodulates up to 8 terrestrial channels. Capable of adjacent channel allocation with VSB modulators. Typical application to distribute 8 additional channels into a hotel system from a terrestrial source.

All diagrams are for illustration purposes only. Actual connections may vary.

Headline Series

The professional solution

The design targets of the Headline series are:

- 19" rack mounting for professional installation
- Flexibility in headend composition, easy integration of different modules
- Constant operation of the installation, the hot insertion of modules allows modules to be added or changed without switching off the whole headend
- Easy maintenance, programming the modules is possible from any interconnection module or remotely via PC, Ethernet or GSM
- The headend will continue to work even if one module fails, every module is powered by its own power supply unit
- Efficiency, each single module has its own power supply, no need for power supply redundancy to ensure the correct functionality of the headend
- Quick and easy installation, modules are compact in size: up to 11 modules can be fitted in one row and up to 80 modules can be installed in one 19" rack

The basic system is composed of an interconnection module in a frame, with a range of further modules and a programming unit.
The modules are installed in a premounted 19" subrack to be fitted into a 19" rack cabinet. The programming unit is linked to one interconnection module and enables all the modules installed in the headend to be programmed.
A remote programming unit is available.

The main features of Headline series product are:

- Fully agile output modulators with double conversion, saw filter and tracking filter built in, able to distribute more than 95 channels in only one headend
- Complete range of products equipped with different technological solutions: analogue and digital modulators, IP encoders and fibre optic modules
- Easy integration of different modules
- 220V mains voltage distributed to all the modules through the interconnection module
- All the connectors are located on the front panel
- Premounted sub-rack to install the modules in a 19'' rack cabinet with interconnection module included.

The installer can easily fit the racks in the cabinet and add new Headline modules

High level headends

Headline Series

Controller host

SIG7905

Module for local and remote connectivity of the professional Headline headends via Ethernet (LAN or WAN) and GSM.
Fracarro Headend Management (FHM) software enables the firmware of the headend devices to be updated remotely.
The SIG7905 also enables all the modules installed in a rack to be monitored.
Firmware can also be upgraded (for the SIG7905 and other modules) by using a USB pen drive.

Item Code		SIG7905 283941
Mass memory		SD Slot (SD card not supplied)
Connection to external peripheral units		RS-232 serial port
Connection to the Ethernet network		Ethernet RJ-45
Connection to pen drive		USB 1 (200mA), USB 2 (400mA)
Digital video input		RJ-45 10-pole connector
Front button to change status (Temporary suspension of the Controller Host – Master/Slave activities)		Button to change status
General features		
Mains voltage	Vac, Hz	220-240~, 50-60
Consumption	W	4
Compliant		EN50083-2, EN60065
Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
Operating temperature	°C	-10 to +45

Headline Series

Programming software

FHM

This software allows full management of K Series, SAF, SIG9708CI and Headline headends. Fracarro Headend Management (FHM) enables all configuration parameters to be changed locally or remotely using controller host SIG7905.

- Using FHM with the controller host SIG7905, critical parameters of connected modules can be viewed locally or remotely
- For user defined parameters an upper and lower alarm limit can be set

Item	Code	Description
FHM	289888	Programming software for Fracarro headends: K Series, SAF, Digiflex and Headline

Headline Series

Modulators

SIG7282
SIG7282S
SIG7281

Fully agile audio video output modulators with double conversion, double saw filter and tracking filter built in. A very high C/N ratio in the band enables the distribution of more than 80 channels. Available in PAL B/G mono (SIG7282), PAL B/G stereo (SIG7282S) and multistandard (SIG7281).

- Using only one modulator, the whole 47-862MHz band can be covered, simplifying the installation and maintenance of the system
- High output level, 95dBµV, to mix all the channels together
- RCA (cinch) connectors for audio and video input and F connectors for RF output
- 70cm RCA cable and KPR41 solid bridge are included
- Programmable via FHM software

Item Code			SIG7282 283943	SIG7282S 283944	SIG7281 283933
Video signal input	Impedance	Ohm	75		
	Level	Vpp	0.7-1.4		
Left and right audio input	Impedance	KOhm	10		
	Nominal input level	Vpp	0.5-3.5		0.5 - 2
Standard			PAL B/G mono Mono	PAL B/G stereo Mono, stereo, dual sound	D/K, I, L, N, H Mono
Audio carrier frequency	B/G standard mono or left carrier	MHz	5.50	5.50	-
	Right carrier	MHz	-	5.74	-
	Standard H	MHz	-	-	5.50
	Standard L D/K	MHz	-	-	6.50
	Standard I	MHz	-	-	6.00
	Standard N	MHz	-	-	4.50
Video/audio power carrier ratio	Standard N	dB	-	-	10
	Standard H	dB	-	-	14
	Standard I	dB	-	-	14
	Standard D/K	dB	-	-	13
	Standard L	dB	-	-	8
	Standard B/G: Mono (5.5MHz) Stereo (5.74MHz)	dB dB	13 -	13 20	- -
	Audio level adjustment	dB	0-10		
Modulation with audio input 1KHz, 0.5VRMS	B/G	KHz	45	45	49
	N (FM)	KHz	-	-	42
	H	KHz	-	-	44
	I, D/K (FM)	KHz	-	-	>47
	L (AM)		-	-	80%
Output frequency		MHz	47-862		
Channels			E2-E69		
Output level		dBµV ±dB	95 ±2		
	Level adjustment	dB	15 by steps of 1		
	Loop-through attenuation	dB	<1.5@860MHz		
	Return loss	dB	>10		
C/N in the channel N ±3		dB	>66		
C/N ±40MHz		dB	>70		
S/N		dB	>50		
S/N in the channel		dB	50		
S/N with 80 channels		dB	48		
Spurious rejection		dB	>60		
Mains voltage		Vac, Hz	220-240, 50-60		
Power consumption		W	8		
Compliant			EN50083-2, EN60065		
Dimensions (rack version)		mm	35.5 (7e) x 133.3 (3U) x 240		
Operating temperature		°C	-10 to +45		

High level headends

Headline Series

COFDM receivers

SIG7531 SIG7540

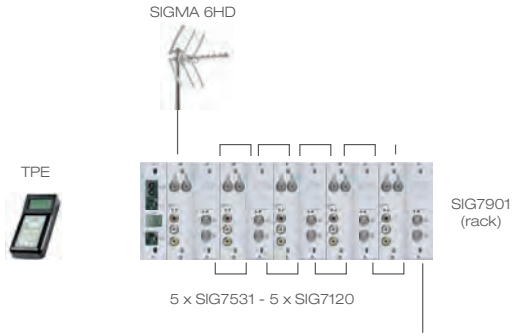
COFDM receivers to distribute a free-to-air (SIG7531) or encrypted (SIG7540) signal from a terrestrial digital source(DVB-T).
In a typical application they can be connected to an SIG7120 module (modulator) that uses the TS flow to create a COFDM multiplex. They can also be connected to an IP encoder SIG7720 creating multiple IP multicast streams. They can also be installed as a single unit to distribute one program through RCA outputs (for MPEG-2 compressed programs).

- Ideal solutions for regeneration of DTT signals
- Enables the audio/video signal to be available as a transport stream MPEG2/MPEG4 form distributed from the back panel
- Loop-through input for the connection of several receivers on the same SAT polarity
- Remote configuration and monitoring (via SIG7905 controller host and FHM software)
- HD compliant

New

Item Code			**SIG7531** 283952	**SIG7540** 283951
Terrestrial COFDM input	Bandwidth	MHz	174 - 230, 470 - 862	174 - 230, 470 - 862
	Minimum frequency step tuning	KHz	167	167
	Channel bandwidth	MHz	7, 8	7, 8
	Loop-through bandwidth	MHz	47-862	47-862
	Loop-through insertion loss	dB	-3 to +2	1
	Input level	dBµV	35-80	35-80
	AFC	KHz	±285 (2K), ±142 (8K)	±285 (2K), ±142 (8K)
	Symbol rate	Msymb/sec	2-30	2-30
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal	
COFDM demodulation	Carrier		2K, 8K	
	Guard Interval		1/4, 1/8, 1/16, 1/32	
	Modulation		QPSK, 16QAM, 64QAM	
	Hierarchy		High/low priority	
	FEC		1/2 , 2/3 , 3/4, 5/6, 7/8, auto	
Common Interface	Connector		-	PCMCIA
	Standard		-	Interface standard EN50221, TS101699
MPEG decodification	Video decoder		MPEG-2 ML@MP	
	Audio decoder		MPEG-2 Layer I and II	
	Video standard		PAL, PAL-N, SECAM-L, NTSC-M, PAL M	
	Video format		Letter box, pan scan, combined, adapted 16/9	
	Audio format		Mono, mono lang. 1, mono lang. 2, stereo	
	Teletext		Yes	
RCA outputs	Output connector		RCA female	
	Audio level	mVRMS	550 max.	
	Video level	Vpp - Ohm	1 typical	
	SINAD	dB	45	
TS output	Connectors		48 pins on the back panel	
	Type		Parallel	
General features	Mains voltage	Vac, Hz	220-240~, 50-60	
	Power consumption	W	4.5	7 (with CAM)
	Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240	
	Operating temperature	°C	-10 to +45	

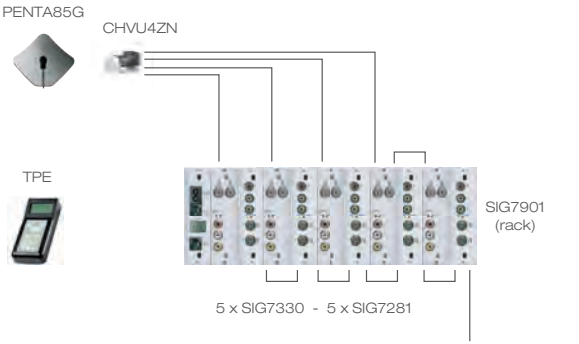
Headline Series - Solution to obtain a personalised COFDM multiplex



Remodulates a terrestrial COFDM multiplex into a personalised COFDM multiplex, giving the option of removing unwanted channels usually present in off air broadcasts. Ideal for hotel MATV applications.

All diagrams are for illustration purposes only. Actual connections may vary.

Headline Series - QPSK to PAL I UHF with TS available



Remodulates a single QPSK channel in to the VHF or UHF band. Transport stream output included for future upgrade to digital output. Typical application to distribute original analogue off air channels.

All diagrams are for illustration purposes only. Actual connections may vary.

High level headends

Headline Series

QPSK receivers

SIG7310

SIG7330

QPSK receivers with audio/video outputs on RCA (cinch) connectors to receive free-to-air digital satellite programs. The SIG7330 module has also got a TS output on the back panel. One input and one loop-through output for the connection of several receivers on the same SAT polarity.

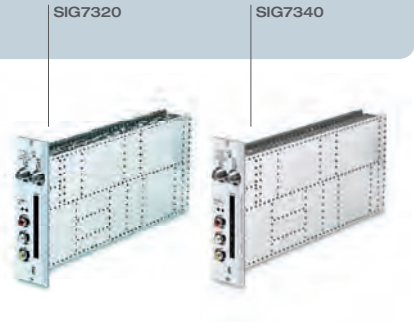
- LNB supply, 14/18V 0/22KHz, DiSEqC 1.0
- Software download possible at the installation site
- Programmable via FHM software

New

Item Code			SIG7310 283938	SIG7330 283954
SAT QPSK input	Input frequency	MHz	950-2150	950-2150
	Input level	dBµV	43-84	48-85
	Impedance	Ohm	75	75
	Bandwidth	MHz	36	36
	Input step tuning	MHz	1	1
	AFC range	MHz	±3	±5
	Loop-through insertion loss	dB	+4 to -6	2
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal	
	LNB power supply		0/14/18VDC, max. 0-22KHz max. 200mA@14VDC DiSEqC 4 pos	
QPSK demodulation	Symbol rate	Msymb/sec	1-40	2-40
	FEC		1/2,2/3,3/4,5/6,7/8, auto	
MPEG decodification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)	
	Audio decoder		MPEG-2 Layer I and Layer II	
	TV standard encoder		PAL, SECAM, NTSC	PAL, PAL-N, PAL-M, SECAM-L, NTSC-M
	Video format		16/9, letter box, pan scan	Adapted 16/9, letter box, pan scan, combined
	Audio fomat		Mono, mono language 1, mono language 2, stereo	
	Teletext		Yes	
RCA outputs	Video		Composite	
	Video output level	Vpp - Ohm	1-75	
	S/N video weighted	dB	>65	45
	Max. audio level	KOhm - VRMS	10 - 0.5	
	Audio band frequency	Hz	20-15000	
	S/N audio weighted	dB	>60	
TS output	Connectors		-	48 pins on the back panel
	Type		-	Parallel
General features	Input connectors		2 F connectors (input + loop-through)	
	A/V connectors		3 x RCA	
	Programming interface		TPE	
	Mains voltage	Vac, Hz	220-240, 50-60 by means of SIG7901 or SIG7902	
	Power consumption	W	11	
	Compliant		EN60065: 2004-06, EN50083-2: 2002-05	
	Dimensions (rack version)	mm	133.3 (7e) x 35.5 (3U) x 240	
	Operating temperature	°C	-10 to +45	

Headline Series

QPSK receivers



QPSK receivers with Common Interface slot to receive free-to-air or encrypted digital satellite programs available on audio/video outputs with RCA (cinch) connectors.
The SIG7340 module also has a TS output on the back panel.
Loop-through output for the connection of several receivers on the same SAT polarity.

- CI slot available to decode encrypted programs. Compatible with more than 150 existing CAMs
- SIG7340 module can be used as a second CAM card
- They can generate 14 or 18V, 22 KHz tone and DiSEqC 1.0, suitable to power LNB or to control multiswitch output
- Programmable via FHM software

New

Item Code			SIG7320 283940	SIG7340 283955
SAT QPSK input	Input frequency	MHz	950-2150	950-2150
	Input level	dBµV	35-85	48-85
	Input step tuning	MHz	1	
	Loop-through insertion loss	dB	2	
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal	
	Input return loss	dB	>10	
	DiSEqC	V, KHz	1.0 4 positions 0/14/18, 0-22	
QPSK demodulation	AFC range	MHz	±3	±5
	Symbol rate	Msymb/sec	2-40	
	FEC		1/2,2/3,3/4,5/6,7/8, auto	1/2,2/3,3/4,5/6,7/8, auto
Audio/video outputs	Video standard		PAL, PAL-N, PAL-M, SECAM-L, NTSC-M	
	Video format		Adapted 16/9, letter box, pan scan, combined	
	Video output level	Vpp-Ohm	1-75	
	S/N unweighted	dB	>65	
	Audio fomat		Mono, mono language 1, mono language 2	
	Max. audio level	mVRMS	550	
TS output	Connectors		-	48 pins on the back panel
	Type		-	Parallel
General features	Input connectors		2 F connectors (input + loop-through)	
	A/V connectors		3 RCA (cinch) connectors	
	Programming interface		TPE	
	Common Interface slot		PCMCIA	
	Mains voltage	Vac, Hz	220-240 , 50-60	
	LNB power supply	mA, V	max. 200@14	
	SINAD	dB	-	45
	Power consumption	W	11	
	Compliant		EN60065: 2004-06, EN50083-2: 2002-05	
	Dimensions (rack version)	mm	133.3 (7e) x 35.5 (3U) x 240	
	Operating temperature	°C	-10 to +45	

High level headends

Headline Series

DVB-S2 receiver

SIG7100

The SIG7100 module, with its Common interface, distributes an encrypted or free-to-air digital signal from satellite in to DVB-S or DVB-S2 standard.
It can be installed as a stand alone unit to distribute one program through the RCA outputs or it can be connected to an SIG7120 module (COFDM modulator) or SIG728x modules (analogue modulators). When connected to the SIG7120 it enables the distribution of a compressed MPEG-4 channel.

- Ideal for the reception of High Definition (HD) programs
- CI slot for encrypted programs
- It can generate 14 or 18V, 22KHz tone and DiSEqC 1.0, suitable to power an LNB or to control multiswitch output
- Programmable via FHM software

Item			SIG7100				
Code			283949				
SAT input	Frequency input	MHz	950-2150	Audio/video outputs	Audio format		Mono, mono language 1, mono language 2, stereo
	Min. frequency step tuning	MHz	1		Audio level	mVRMS	550 max.
	AFC	MHz	±5		SINAD	dB	45
	Loop-through insertion loss	dB	2		Video decoder		MPEG-2 ML@MP
	Input level	dBµV	48-85		Audio decoder		MPEG-2 Layer I and II
	Symbol rate (DVB-S)	Msymb/sec	2-40	Transport Stream outputs	Connectors		48 pins on the back panel
	Symbol rate (DVB-S2)	Msymb/sec	2-30		Type		Parallel
Common Interface	Connector		PCMCIA	General features	Mains voltage	Vac, Hz	220-240, 50-60
	Standard		EN50221, TS101699		LNB power supply	mA	max. 200@14V
Audio/video outputs	Output connector		RCA female		Power consumption	W	11
	Video standard		PAL, SECAM, NTSC		Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
	Video format		16/9, letter box, pan scan, combined		Operating temperature	°C	-10 to +45
	Video level	Vpp	1 Typ.				

Headline Series

Analogue to MPEG-2 TS encoder

New

SIG7404

The SIG7404 module encodes 4 analogue inputs. It enables the audio/video signals to be available in the transport stream in an MPEG2 form, distributed on the ASI output.
In a typical application, it can be connected to the SIG7121 module (modulator) that, using TS flow, creates a COFDM multiplex. It can also be connected to an IP encoder SIG7720 creating many IP multicast streams.

- Supports 4 input AV signals with coding and multiplexing
- Standard video channel MPEG-2 coding
- Bit rate 1 - 15Mbps
- Formats supported are Full D1, Half D1, SIF, QSIF
- Supports PAL and NTSC

Item			SIG7404				
Code			287075				
Input	Video connectors		CVBS, S-Video	Coding	Audio		MPEG-1 Layer I, Layer II
	Video format		PAL, NTSC		Audio rate	Kbps	32, 64, 128, 192, 256, 384
	Audio connectors		Analogue balanced		Audio sampling rate	KHz	32, 44.1, 48
Output	Type		DVB-ASI	General features	Output connector		ASI
	Max. bit rate	Mbps	170		Video standard		PAL, NTSC
	Effective bit rate	Mbps	1-15		Video format		Full D1, Half D1, SIF, QSIF
	Connectors		BNC, 75 Ohm		Mains voltage	Hz	220-240V~, 50-60
	ASI mode		BYTE		Power consumption	W	30
Coding	Video standard		MPEG-1, MPEG-2 MP@ML(4:2:0)		Dimensions	mm	318 x 483 x 44
					Operating temperature	°C	-10 to +45
	Video bit rate	Mbps	2.5-15				

Headline Series

COFDM modulator

SIG7120

The SIG7120 modulates a signal (TS) received in the input from the back panel in COFDM DVB-T standard. The main application is DVB-S2 to COFDM transmodulation, when connected to an SIG7100 module.
On the front panel there is an additional F connector that can be used as an output loop-through.

- Possibility to choose the desired COFDM modulation
- Output level adjustment
- HD compliant
- When connected to different receivers (SAT, COFDM, A/V, etc.), different types of transmodulation can be performed
- Programmable via FHM software

Item			SIG7120				
Code			283950				
Transport stream input	Connectors		48 pins on the back panel	Output signal	Carrier		2K, 8K
	Type		Parallel		Modulation		QPSK, 16QAM, 64QAM
	Max. bit rate	Mbit/s	100		FEC		1/2, 2/3, 3/4, 5/6, 7/8
Output signal	Output connector		F female		Guard interval		1/4, 1/8,1/16, 1/32
	Output frequency	MHz	108-862		Spectrum		Normal/Inverted
	Frequency steps	KHz	10	General features	Mains voltage	Vac, Hz	220-240, 50-60
	Max. output level	dBµV	85±2		Power consumption	W	10
	Level adjustment	dB	0-15 (step 1dB)		Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
	Loop-through loss	dB	< 1.5		Operating temperature	°C	-10 to +45

Headline Series

COFDM modulator with ASI input

New

SIG7121

The SIG7121 modulates a signal received in the ASI input to DVB-T standard (using COFDM modulation). The main application is for signals coming from an SIG7404 analogue to ASI 4 input converter. LCN embedded.
Additional COFDM modulators can use the same ASI input through the back panel connection.

- COFDM modulator with ASI input on the front panel
- Up to 3 additional COFDM modulators (SIG7120) can share the same ASI/TS input
- Remote configuration and monitoring (via controller host SIG7905 and FHM software)
- HD compliant
- MPEG2/MPEG4 compliant

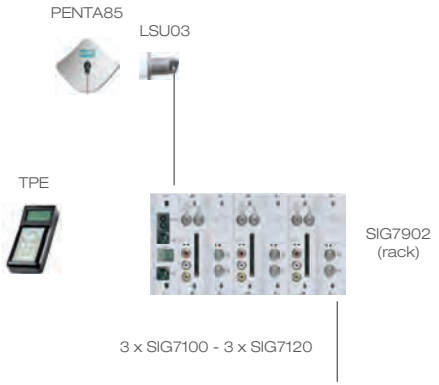
Item			SIG7121				
Code			283953				
Output signal	Output connector		F female	Output signal	MER	dB	38
	Output frequency	MHz	108–862	ASI input	ASI connector		BNC, 75 Ohm
	Frequency step	KHz	10		Max. bit rate	Mbit/s	216
	Maximum output level	dBµV	85	Back panel TS input	Connector		48 pins on back panel
	Level adjustment	dB	0-15		Type		Parallel
	Loop-through loss	dB	< 1.5		Maximum bit rate	Mbit/s	100
	Carrier		2K, 8K	General features	Mains voltage	Vac, Hz	220-240~, 50-60
	Modulation		QPSK, 16QAM, 64QAM		Power consumption	W	11
	FEC		1/2, 2/3, 3/4, 5/6, 7/8		Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
	Guard interval		1/4, 1/8,1/16, 1/32		Operating temperature	°C	-10 to +45
	Spectrum		Normal/inverted				

High level headends

Headline Series

COFDM transmodulation

Headline Series - COFDM transmodulation for digital TV



To distribute satellite programmes into a digital TV or set top box, including MPEG4 high definition.

All diagrams are for illustration purposes only. Actual connections may vary.

Headline Series

Transmitters

SIG7600-HTX

Optical transmitter that converts an RF TV-SAT signal into an optical signal. The signals are transmitted at 1310nm with optical power of 13mW. This high powered signal can be split up to 16 times. Five different LEDs show you the module status - module on, laser on, over current, laser temperature and board temperature.

- High optical power
- HD compliant
- Very high S/N
- Programmable via FHM software
- Can be remotely monitored

Item Code		SIG7600-HTX 270678
Optical wavelength	nm	1310
Optical output power	mW (dBm)	13 (11.1)
Optical return loss	dB	> 55
RF bandwidth	MHz	47-2150
Flatness TV (47-862MHz)	dB	±1
Flatness SAT (950-2150MHz)	dB	±2
Link flatness (47-2150MHz)	dB	±2.5
RF input level	dBµV	80-85 (opt. 85)
RF return loss	dB	>10
Input impedance	Ohm	75
RF connector		F female
Optical connector		SC/APC
Mains voltage	Vac, Hz	220-240, 50-60
Power consumption	W	4
Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
Operating temperature	°C	-10 to +45

Headline Series

Optical splitters

SIG7622
SIG7624

Optical splitters that split the optical signal into two outputs (SIG7622) and four outputs (SIG7624).
The optical signal on all the outputs depends on the typical insertion loss.

- Optimised insertion loss
- HD compliant
- Professional rack solution

Item Code		SIG7622 270687	SIG7624 270688
Wavelength	nm	1310, 1550	1310, 1550
No. of outputs		2	4
Insertion loss (Typ.)	dB	3.2	6.4
Return loss	dB	>50	>50
Isolation	dB	>50	>50
Connectors	Type	SC/APC	SC/APC
Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240	35.5 (7e) x 133.3 (3U) x 240
Operating temperature	°C	-10 to +45	-10 to +45

High level headends

Headline Series

IP encoders (FTA)

SIG7710
SIG7730

Encoders that work as a DVB-S (SIG7710) and DVB-T (SIG7730) to IP gateway.
Satellite and digital terrestrial signals are received on the F connector input, converted to IP standard signals and streamed through the RJ45 output port into LAN.
From the user side, the programs and services can be viewed using an IP set top box (STB) on TV devices or using dedicated software on a PC.

- Programs and services delivered as multicast or unicast streams
- Loop-through (active/passive) input allows easy management of the headend
- MPEG-2/MPEG-4 compliant
- Programmable via TPE Web Interface or FHM software

Item Code			SIG7710 283945	SIG7730 283946
Input	Input frequency	MHz	950–2150	174–230, 470–862
	Input frequency step	MHz	1	-
	Min. frequency step	KHz	-	166.7
	AFC 2K 8K	MHz KHz KHz	±3 - -	- ±285 ±142
	Loop-through loss	dB	<1.5	<1.5
	Input level	dBµV	40–84	30–80
	Return loss	dB	10	-
	LNB power supply	V, KHz, mA	0/14/18, 0/22, 200	-
	DiSEqC		1.0	-
	Demodulation		ETS 300421	-
	Symbol rate	Msymb/sec	2–35	-
	FEC		1/2, 2/3, 3/4, 5/6, 7/8, auto	-
Input signal	Carrier		-	2K, 8K
	Modulation		-	QPSK, 16QAM, 64QAM
	Hierarchy		-	High/low priority
	Timeguard		-	1/4, 1/8, 1/16, 1/32
	FEC		-	1/2, 2/3, 3/4, 5/6, 7/8, auto
	Demodulation		-	ETS300744
	Connectors	Type	F	
Output	LAN Interface		IEEE 802.3 100BaseT	
	Encapsulation		ETSI TS102034	
	Type of streaming		Multicast/unicast	
	Web services		DVB encapsulation, http, TELNET, FTP, SAP	
General features	Mains voltage	Vac, Hz	220-240~, 50-60	
	Consumption	W	11	4
	Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240	
	Operating temperature	°C	-10 to +45	

Headline Series

IP encoder with TS input

SIG7720

Encoder that works from Transport Stream (TS) to IP gateway.
Signals are received on the back-panel, converted to IP standard signals and streamed through the RJ45 output port into LAN. Input signal can be received from either an SIG7100 module (DVB-S2 to TS) or an SIG7540 module (DVB-T).

- Programs and services are delivered as multicast or unicast streams
- Loop-through (active/passive) input allows easy management of the headend
- MPEG-2/MPEG-4 compliant
- Programmable via TPE Web Interface or FHM software

Item Code			SIG7720 283947				
Input	Connector	Type	48 pins on back panel	Output	Web services		DVB encapsulation, http, TELNET, FTP, SAP
	Max. bit rate	Mbit/s	100				
Output	LAN interface		IEEE 802.3 100BaseT	General features	Mains voltage	Vac, Hz	220-240, 50-60
	Encapsulation		ETSI TS102034		Power consumption	W	8
	Type of streaming		Multicast/unicast		Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
					Operating temperature	°C	-10 to +45

Headline Series

Interconnection module

SIG7900

Interconnection module to power and address the Headline modules.
The interconnection module is installed in sub-rack SIG7901 or SIG7902.
Unit is included with an SIG7901 or SIG7902.
Allows the distribution of mains voltage to power all modules installed in the same row.
It also distributes the data bus to address and control the modules.

Item Code		SIG7900 283935
Mains voltage	Vac, Hz	220-240, 50-60, class II
Power consumption	W max.	2 (stand alone) 100 (with all the modules connected)
Back panel connections		Mains voltage, RS485, address line
Compliant		EN50083-1, EN50083-2, EN60065
Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
Operating temperature	°C	-10 to +45

Headline Series

Accessories

Item	Code	Description	
SIG7901	283930	19" sub-rack to be installed in a 19" rack cabinet. Interconnection module SIG7900 included. SIG7901 is fully mounted, with all the accessories included in the packaging (mains cord, extracting tools, channel labels and module labels).	
SIG7902	283929	Sub-rack to be wall mounted. 6 modules plus one SIG7900 can be fitted. Interconnection module SIG7900 included. SIG7902 is fully mounted, with all the accessories included in the packaging (mains cord, extracting tools, channel labels and module labels).	
SIG7903	283928	Spacer kit to allow the 19" subrack SIG7901 to be mounted further back than the other equipment in the 19"rack cabinet.	
SIG7904	283927	Front plate, 3U 1 slot, to be used with SIG7901 and SIG7902 to cover empty bays.	

High level headends

Headline Series

Accessories

TPE

TPE programming unit with numeric keypad and graphic display. Enables the programming of all new modules in the K Series and Headline range and also the original K Series modules.

- Compatible with all K Series modules (emulates KTP for original modules)
- Compatible with all Headline modules
- USB drivers available for PC connection
- Language menu available: Italian, English, German, French, Spanish and Portuguese
- Maximum addressable modules: 253
- Copy function available, to copy the settings from one device to another
- Adjustable contrast (31 steps)
- Display: LCD graphic backlit display, 16x4 characters
- 18 button keypad

Item	Code	Description	Packaging Pcs
TPE	282733	**Programming unit** Programming unit with numeric keypad and graphic display.	1

Item	Code	Description	
CV-RCA/HQ	288952	**High quality A/V cable with 3 RCA connectors** 27.5cm in length or 38.5cm in length with 3 connectors	

Headline Series

19” rack cabinets

The range includes two floor standing cabinets and one wall mounted cabinet, with accessories, to be used to install SMATV headends for K-series and Headline. The cabinets and accessories are available on request with a delivery time of 20 days from order. All the products are packaged individually. The height of the 19” rack is given in U, one U equals 44.45mm. The width is given in e, one e equals 5.08mm. One cabinet can contain 84e, equal to 42.6cm (the space needed to install the equipment with a width of 19” is 48.26cm). One inch equals 2.54cm.

Item	Code	Description	
RACK42U	289722	19” floor standing cabinet. Tempered glazed door. All side and rear cabinet panels can be disassembled for easy installation of equipment. The 19” uprights are adjustable according to the depth of the equipment to be installed. Two apertures for feeding cables into the unit at floor level or at the top where a ventilation kit can be fitted. The cabinets are supplied pre mounted. Dimensions mm (l x h x w): 600x400x1957 - Width: 84e - Max. depth : 320mm - Height: 42U	
RACK27U	289721	19” floor standing cabinet. Tempered glazed door. All side and rear cabinet panels can be disassembled for easy installation of equipment. The 19” uprights are adjustable according to the depth of the equipment to be installed. Two apertures for feeding cables into the unit at floor level or at the top where a ventilation kit can be fitted. The cabinets are supplied pre mounted. Dimensions mm (l x h x w): 600x400x1290 - Width: 84e - Max. depth: 320mm - Height: 27U	
RACK6U	289720	19” wall mounted cabinet. Tempered glazed door that can be rotated 180°. The 19” uprights are adjustable according to the depth of the equipment to be installed. Two apertures for power cables at floor level or at the top where a ventilation kit can be fitted. Dimensions mm (l x h x w): 550x320x310 - Width: 84e - Depth: 280mm - Height: 6U	

Headline Series

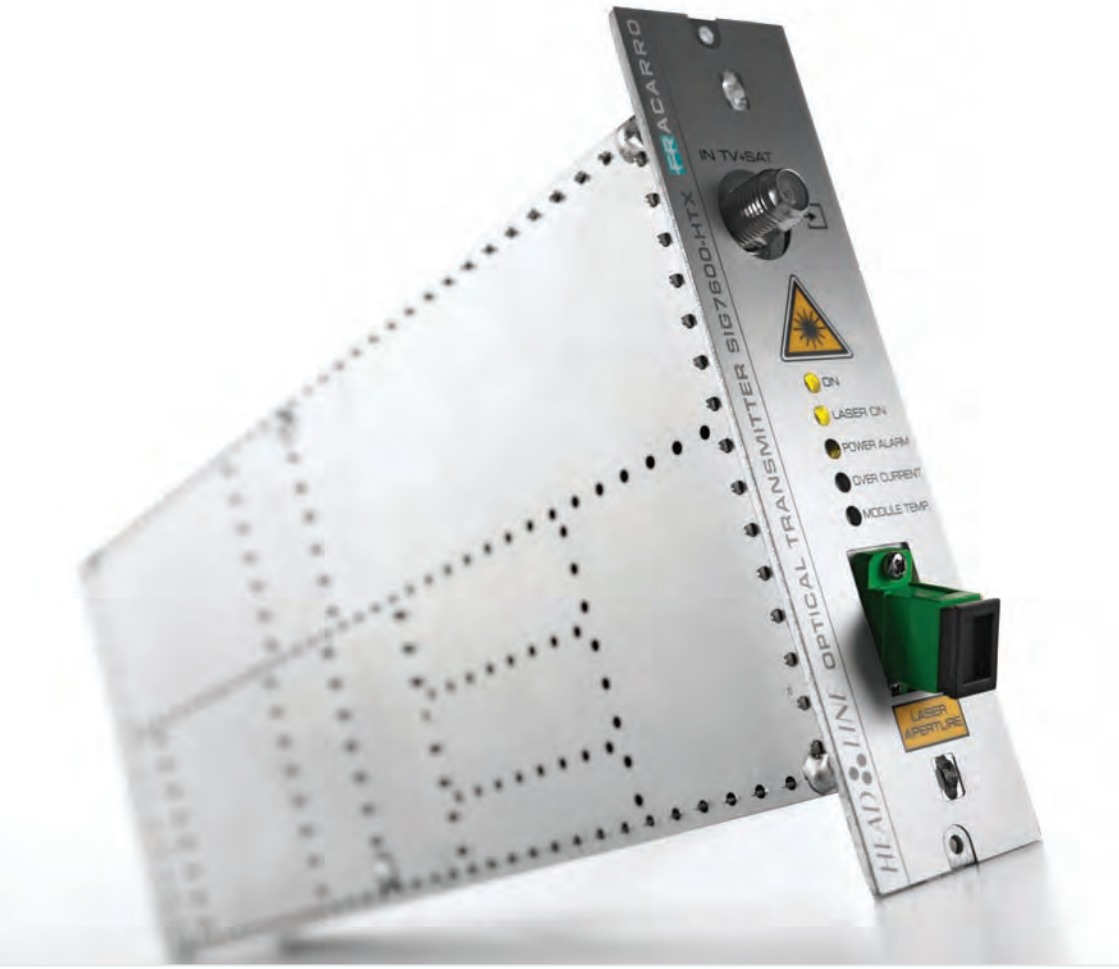
Rack accessories

Item	Code	Description	
RACK01	289708	Set of 50 M6 cage nuts and 50 screws.	
RACK02	289709	Set of 4 levelling feet	
RACK03	289710	Set of 4 wheels (two with brakes)	
RACK04	289711	1U cable inlet panel	
RACK05	289712	3U blank panel	
RACK06	289713	19" shelf - 250mm	
RACK07	289714	1U blank panel	
RACK08	289715	2U, 150mm recessed panel	
RACK09	289716	4U, 150mm recessed panel	
RACK10	289717	2 fan units with steel grid. Recommended for RACK27U	
RACK11	289718	3 fan units with steel grid and thermostat. Recommended for RACK42U	
RACK12	289719	Power duct with 5 universal sockets with magneto-thermal switch (4.5kA)	

CATV systems and fibre optic solutions

The CATV range of amplifiers are designed to distribute signals in large installations. These solutions, along with Fracarro headends, allow central installations for the reception, filtering and amplification of signals and distribution to all outlets.

For professional installations over long distances for the distribution of TV and Satellite (from 47 to 2150MHz), a range of Fracarro fibre optic equipment has been designed, including optic transmitters and receivers, splitters and a wide range of accessories. The fibre optic devices are available in a modular version (K Series), a professional version (Headline) and in a multiswitch housing (OPT Series).



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CATV systems

TV amplifiers

J21B - J31B

J21B
J31B

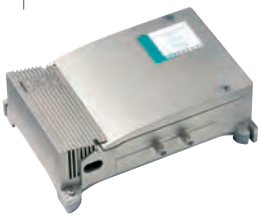
Push-pull amplifiers with excellent performance in band linearity and flatness. The unit conforms to standard EN60065 and is manufactured in die cast housing with F connectors and direct connection to the mains. Shielding factor to standard EN50083-2. It is possible to equalise cable losses from 0 to 20dB.
Mains voltage 220-240V~, 50-60Hz. Power consumption 3.5W.

Item	Code	Gain (adj.)	No. of outputs	Output level	Noise figure	Frequency	Operating temperature	Packaging
		dB		dBµV	dB	MHz	°C	Pcs
J21B	223023	21 (20)	1	117	10	47-862	-10 to +55	1
J31B	223024	31 (20)	1	117	10	47-862	-10 to +55	1

TV amplifiers

AMP9762UK - AMP9762B

AMP9762UK
AMP9762B



Terrestrial line amplifiers with return path. To be used as the final amplifier before wall outlets. Normally used to amplify signals in small distribution networks.
These amplifiers can be used at the output of an optical link.
All the adjustments are internally located under the die cast cover to prevent unauthorised access.
The die cast cover is secured with safety screws. For installation, supports are available (product MBX0001 see page 57) that leave a space of 19mm between the amplifier and the wall, allowing room for cables or the amplifier to be mounted in different positions. Packaging 1 pc.

- Gain and slope can be adjusted
- Passive or active return path, switchable by the installer

Item		AMP9762UK - AMP9762B	
Code		235054	235055
Bandwidth	MHz	5-30 (AMP9762UK), 5-65 (AMP9762B)	47-862 (AMP9762UK), 88-862 (AMP9762B)
Gain	dB	25 *	40
Flatness	dB	±2	±2
Gain adjustment	dB	-	0-20
Slope adjustment	dB	-	0-20
Max. output level			
IM3 -60dB 3 unequal tones	dBµV	100	120
IM3 -54dB 2 equal tones	dBµV	100	120
IM3 -52dB 3 equal tones	dBµV	98	118
IM3 -60dB 3 equal tones	dBµV	94	114
IM3 -60dB 2 equal tones	dBµV	97	117
IM2 -60dB 2 equal tones	dBµV	95	115
Noise figure	dB	3	8
Impedance	Ohm	75	
Connectors	Type	F	
Test point	dB	-30	
Mains voltage	Vac, Hz	220-240, 50-60	
Power consumption	W	9	
Protection index		IP20	
Dimensions (l x h x w)	mm	194x143x53	
Operating temperature	°C	-10 to +55	

* Return path gain can be set to -2dB.

CATV amplifiers

AMP5121.. Series

AMP5121L
AMP5121M

Distribution amplifiers to be used in HFC (hybrid fibre cable) networks.

- High output level and low power consumption using GaAs FET hybrid technology
- Gain and tilt adjustment using attenuators
- Integrated active or passive return path, selected by a switch
- Mains or line powered with switch mode power supply
- Die-cast aluminium housing meeting IP65 protection
- 5A AC power pass to any terminal and 10A external AC input terminal
- Excellent surge and transient protection

ACCESSORIES AMP5121x SERIES
- Diplexer filter module: MDA.., 2 pieces per product
- Interstage module: MEX.., 1 piece per product
- Output splitter module: MS.., 1 piece per product

ATTENTION: these products need further accessories and connectors to function which are not included in the packaging
Minimum configuration requires:
- 2 x diplexer filter modules MDA (see page 105), if not required replace them with two ML02 link modules
- 1 x interstage module MEX (see page 105), if not required replace it with one ML01 module
- The amplifier is supplied with PG11 threads, adaptors not included. Page 108 shows the list of available adaptors

Item Code		AMP5121L 289696	AMP5121M 289695
Forward path			
Bandwidth (depends on diplexer modules)	MHz	47-862	
Gain	47/862MHz - dB	38/38	
Gain adjustment	dB	0-18	
Equaliser	dB	0-18	
Linearity	dB	±1	
Output level, 3rd order (DIN 45004 B)	dBµV	124	
Output level, 2nd order (DIN 45004 B)	dBµV	122	
Output level, CTB (42 ch CENELEC)	flat/8dB tilt - dBµV	108.5/111	
Output level, CSO (42 ch CENELEC)	dBµV	112	
Noise figure	47/862MHz - dB	5/6.5	
Return loss, @40MHz	dB	18-1.5/oct	
Return path			
Bandwidth (depends on diplexer modules)	MHz	5-65	
Line power, voltage	Vac	24-65	-
Line power, current	mA	750-330	-
Mains power, voltage	Vac	-	175-260
Power consumption (incl. return path)	W	13.5	
Dimensions (l x h x w)	mm	200x180x82	
Operating temperature	°C	- 10 to 55	
Packaging	Pcs	5	3

Note: All specifications are with ML01 modules.

CATV systems

CATV amplifiers

AMP522.. Series

AMP522AL - AMP522AM
AMP522PL - AMP522PM

Distribution amplifiers to be used in HFC (hybrid fibre cable) networks

- High output level and low power consumption using GaAs FET hybrid technology
- Gain and tilt adjustment using attenuators (AMP522AL - AMP522AM) or using PADs (AMP522PL - AMP522PM)
- Integrated active or passive return path, selected by a switch
- Mains or line powered with switch mode power supply
- Die-cast aluminium housing meeting IP65 protection
- 5A AC power pass through to any terminal and 10A external AC input terminal
- Excellent surge and transient protection

ACCESSORIES AMP522Ax - AMP522Px SERIES

- Diplexer filter module: MDA.. for the return path, 2 pieces per product
- Interstage module: MEX.., 1 piece per product
- Output splitter module: MS.., 1 piece per module
- DIB module: MDIB, to reduce noise from the return path
- Link module ML.., to be used to replace MDA.., MS..
- Pad modules: MPG.., to be used to set the attenuation and tilt (only for AMP522Px)

ATTENTION: these products need further accessories and connectors to function which are not included in the packaging

Minimum configuration requires:

- 2 x diplexer filter modules MDA (see page 105), if not required replace them with two ML02 link modules
- The amplifier is supplied with PG11 threads, adaptors not included. Page 108 shows the list of available adaptors
- Only for AMP522Ax: 1 x interstage module MEX (these page 105), if not required replace it with one ML01 module

Item Code		AMP522AL 289602	AMP522AM 289604	AMP522PL 289601	AMP522PM 289603
Forward path					
Bandwidth (depends on diplexer modules)	MHz	47-862			
Gain (8dB gain switch)	47/862MHz - dB	30/38			
Gain adjustment	dB	0-18 by attenuators		0-22 by pads	
Equaliser	dB	0-18 by attenuators		0-18 by pads	
Linearity	dB	±1			
Output level, 3rd order (DIN 45004 B)	dBµV	124			
Output level, 2nd order (DIN 45004 A1)	dBµV	121			
Output level, CTB (42 ch CENELEC)	flat/8dB tilt - dBµV	108/110			
Output level, CTB (42 ch CENELEC) by 6dB interstage att.	flat/8dB tilt - dBµV	107.5/109.5			
Output level, CSO (42 ch CENELEC)	dBµV	110			
Noise figure	47/862MHz - dB	5/6.5			
Noise figure by 6dB interstage att.	47/862MHz - dB	6/8	5/7	6/8	5/7
Return loss, @40MHz	dB	18-1.5/oct			
Return path					
Bandwidth (depends on diplexer modules)	MHz	5-65			
Gain	dB	23			
Gain adjustment	dB	0-18 by attenuators		0-18 by pads	
Equaliser	dB	0-8 by attenuators		0-8 by pads	
Linearity	dB	± 1			
Output level, 3rd order (DIN 45004 B)	dBµV	119			
Output level, 2nd order (DIN 45004 A1)	dBµV	104			
Noise figure	dB	6			
Line power, voltage	Vac	24-65	-	24-65	-
Line power, current	mA	540-250	-	540-250	-
Mains power, voltage	Vac	-	175-260	-	175-260
Power consumption (incl. return path)	W	12.5			
Dimensions (l x h x w)	mm	200x180x82			
Operating temperature	°C	-10 to +55			

Note: All specifications are with ML01 modules. If other modules are inserted, please correct for insertion loss.

Accessories

Diplexer and splitter modules

MDA..
MS..

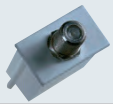
Modules to be used with the AMP522.. amplifier range.
MDA diplexer filter modules mix/demix the return path and forward path. MS splitter modules are used to set the outputs.
Packaging 10 pcs.

Item	Code	Frequency, forward path MHz	Frequency, return path MHz	Insertion loss return path dB	Insertion loss forward path dB
MDA3047	289613	47-862	5-30	0.6@30MHz/-	-/0.6@47MHz/0.3@862MHz
MDA6587	289617	87-862	5-65	0.7@65MHz/-	-/0.7@87MHz/0.3@862MHz

Item Code		MS100 289650	MS101 289651	MS110 289652	MS114 289653	MS118 289654	MS207 289690	MS404 289656
Frequency	MHz	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000
Insertion loss, output A	dB	0	No pass	-	-	-	-	-
5/606/862/1000MHz		-	-	10.2/9.9/9.9/10	14.2/14/14/14	18.2/18/17.8/18	7.3/6.8/6.8/6.9	3.3/3.5/3.7/3.9
Insertion loss, output B	dB	No pass	0	-	-	-	-	-
5/606/862/1000MHz		-	-	0.9/1.1/1.3/1.4	1.1/0.7/0.9/1.2	0.7/0.4/0.5/0.7	1.8/2.2/2.4/2.5	3.3/3.5/3.7/3.9
Isolation, out A - out B @40MHz		-	-	>29-1.5/oct	>34-1.5/oct	>38-1.5/oct	>23-1.5/oct	>20-1.5/oct

Accessories

Link modules

Item	Code	Description	
ML01	289627	Link module ML01 is used as a bridge socket for the interstage modules and/or socket for return path modules (2 pcs). ML02 link module is used as a bridge in the splitter and diplex filter sockets. Frequency range: 5-1000MHz - Insertion loss: 0dB Return loss: 26-1.5/oct. - Packaging 10 pcs	
ML02	289628		
MP20	289629	Test module to be inserted in the MS-module socket to avoid interrupting the connected distribution network. Frequency range: 5-1000MHz - Tap loss: 20dB Linearity: ±0.5dB - Packaging 5 pcs.	

Accessories

Interstage modules

MEX800/..

Interstage modules designed to provide attenuation and slope between the two different forward amplifier stages in AMP5121.. and AMP522.. amplifiers.
Packaging 10 pcs.

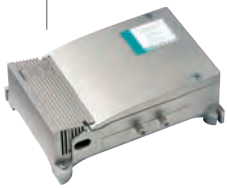
Item	Code	Frequency MHz	Insertion loss, pos. A 47/862MHz dB	Insertion loss, pos. B 47/862MHz dB
MEX800/08	289620	47-862	0/0	8/0.3
MEX800/06	289619	47-862	0/0	6/0.3

CATV systems

UBB amplifiers

AMP9763 - AMP9763B

AMP9763
AMP9763B



UBB (ultra broadband) line amplifiers with return path. To be used as the final amplifier before wall outlets. Normally used to amplify signals in small distribution networks. Can be used to amplify signals after an optical link. All adjustments are internally located under the die cast cover secured with safety screws to prevent unauthorised access. Packaging 1 pc.

- Gain and slope adjustment in the TV and SAT band
- Passive or active return path, switchable by the installer

Item Code		**AMP9763 - AMP9763B** 235052 - 235056		
Frequency	MHz	5-30 (AMP9763) 5-65 (AMP9763B)	47-862 (AMP9763) 87-862 (AMP9763B)	950-2400
Gain	dB	25 *	40	40
Flatness	dB	±2	±2	±2
Gain adjustment	dB	-	0-20	0-20
Slope adjustment	dB	-	0-20	0-20
Max. output level				
IM3 -60 dB 3 unequal tones	dBµV	100	120	-
IM3 -54 dB 2 equal tones	dBµV	100	120	-
IM3 -52 dB 3 equal tones	dBµV	98	118	-
IM3 -60 dB 3 equal tones	dBµV	94	114	-
IM3 -60 dB 2 equal tones	dBµV	97	117	-
IM2 -60 dB 2 equal tones	dBµV	95	115	-
IM2 -35 dB 2 equal tones	dBµV	-	-	125
Noise figure	dB	3	8	10
Connectors		F		
Impedance	Ohm	75		
Test point	dB	-30		
Mains voltage	Vac, Hz	220-240, 50-60		
Power consumption	W	16		
Protection index		IP20		
Dimensions (l x h x w)	mm	194x143x53		
Operating temperature	°C	-10 to +55		

* Return path gain can be set to -2dB.
Note: Spacers available (product MBX0001 see page 57) for installation to leave a 19mm gap between the amplifier and the wall to allow cable to be run neatly behind the amplifier.

CATV C4 UBB amplifiers

AMP523.. Series

AMP523L
AMP523M

These amplifiers are used as trunk distribution amplifiers in large networks with TV and SAT band distribution. They amplify the forward and return path. Mains and remote powered versions are available. PG11 thread for different connector types. Packaging 1 pc.

- High output level and low power consumption
- Switchable passive or active return path
- Gain and tilt adjustment using attenuators
- LED operating indication
- Minimal noise figure through equalisation and attenuation after the pre-amplifier stage

Item Code		**AMP523L - AMP523M** 289896 - 289895		
Frequency	MHz	4-65	88-862	950-2400
Gain	dB	Switchable	34	40
Flatness	dB	-	±1	±1.5
Gain adjustment	dB	-	0-20	0-20
Noise figure	dB	6.5	7	8.5
Slope adjustment	dB	-	0-20	0-20
Max. output level				
60dB IMA3 (DIN45004B)	dBµV	119		
60dB IMA2 (DIN45004A1)	dBµV	111		
60dB CTB	dBµV	105		
60dB CSO	dBµV	106		
35dB IMA3/2150	dBµV	-	-	120
Return loss	dB	20@40MHz - 1.5/oct		
Operating voltage	Vac	AMP523L: 24-70	AMP523M: 180-265	
Power consumption	W	AMP523L: 13-15	AMP523M: 13	
Transit current	A	-	AMP523M: 2.5	
Connectors		PG11		
Impedance	Ohm	75		
Protection index		IP20		
Dimensions (l x h x w)	mm	242x163x60 (IP66)		
Operating temperature	°C	- 10 to 55		

Note: The product has to be completed with connectors, not included in the packaging (see following page).

CATV systems - Fibre optic solutions

Accessories

Adaptors and accessories box

Item	Code	Description		
PG11-3,5/12	289658	PG11 to 3.5/12 adaptor - packaging 10 pcs		
PG11-5/8	289659	PG11 to 5/8" reduction ring - packaging 100 pcs		
PG11-F	289660	PG11 to F adaptor - packaging 10 pcs		
PAD-BOX	289661	Box with a variety of pads and other accessories.		
		MPG00 - Pack. 12 pcs	ML01 - Pack. 6 pcs	
		MPG02 to 22 - Pack. 3 pcs each	5A fuses - Pack. 5 pcs	
		MS100 - Pack. 2 pcs	O rings - Pack. 10 pcs	
		MS101 - Pack. 2 pcs	Terminals - Pack. 10 pcs	
		MS404 - Pack. 2 pcs		

Accessories

PSU8510

PSU8510

Power supply for CATV networks, to be used to power line and distribution amplifiers (AMP5121L, AMP522AL, AMP522PL and AMP523L) through the cable. Power inserter built-in, with two outputs. Output voltage (48, 60 or 68Vac, selectable by means of a fuse) can be injected in one or both trunks. PG11 tread, 5/8" reduction ring included. Operating temperature: -10 to +55°C

- High output current, 10A max.
- Die-cast housing, IP65
- Output voltage can be injected on to both outputs
- Protected against accidental short circuit and overload

Item Code		PSU8510 289847
Outputs	No.	2
Bandwidth	MHz	5-862
Output voltage	Vac	Selectable 48, 60 or 68 by means of a fuse
Output current	A	10@48Vac
Mains voltage	Vac, Hz	230, 50-60
Connector	Type	PG11 with 5/8" reduction ring
Max. power consumption	W	600@48Vac
Dimensions	mm	210x170x115
Operating temperature	°C	-10 to +55

Fibre optic characteristics

- Suitable for TV and satellite applications
- Optimal electrical performance
- Low signal loss over long distances
- Installation problems and signal quality degradation reduced as line amplifiers not required
- Large bandwidth ideal for both analogue and digital distribution
- Excellent linearity, well above coaxial standards
- Easy and cost effective to install
- Fibre optic cables are smaller in diameter and contain multiple fibres
- Broadband access in fibre is also available for other applications
- Isolated: not affected by electromagnetic interference
- Can be laid with electrical cable in power lines
- The Fracarro range allows you to create customised interactive networks due to return path modules

K Series system: applications

- Multi-dwelling units
- Hotels
- Hospitals
- Commercial sites
- Sports stadiums
- Areas where electromagnetic interference is a problem
- Sites where a degree of waterproofing is required

Headline Series

High power optical transmitter, 2 and 4 way splitters available in the Headline range (see page 95)

OPT Series

These fibre transmitters and receivers can be used for the distribution of satellite and terrestrial signals over standard single mode fibre and are ideal for covering long distances and repositioning system headends

Fibre optic solutions

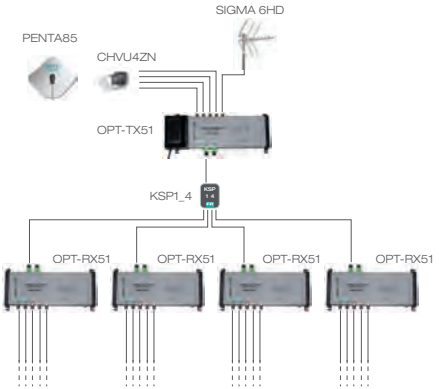
Optical transmitters and receivers

OPT.. Series

OPT-TX51 converts and distributes terrestrial and 4 satellite polarities through one single fibre cable, saving time and money in installation.
Vice versa OPT-RX51 converts back these terrestrial and satellite signals.
OPT-TX54 and OPT-RX54 are respectively a 4 optical transmitter and a 4 optical receiver for TV-SAT signals in the same housing.

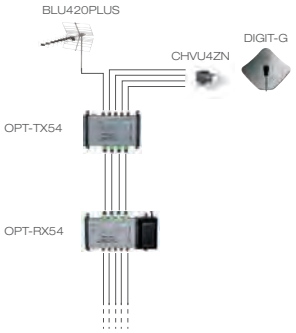
Item	Code	OPTICAL INTERFACE Wave length nm	Input power dBm	Output power dBm	Bandwidth MHz	Gain dB	RF SECTION Max. input level dBµV	Max. output level dBµV	Power supply	LNB supply mA
OPT-TX51	270689	1550	-	10	47-862, 950-2200	4	117	-	220-240Vac, 50-60Hz	300
OPT-TX54	270691	1310	-	4	47-862, 950-2200	9	120	-	220-240Vac, 50-60Hz	300
OPT-RX54	270692	1260-1600	-12 to +5	-	47-862, 950-2200	4	-	115	14-18V	-
OPT-RX51	270690	1260-1600	-12 to +5	-	47-862 950-2200	4	-	110	14-18V	-

Send satellite and terrestrial signals over fibre optic



Capable of long distances all four polarities and terrestrial sent over a single fbre. Bi directional auxiliary port for additional services.

Send satellite and terrestrial signals over fibre optic



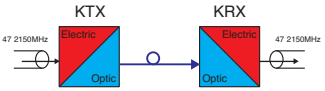
Capable of long distances, each polarity sent separately.

All diagrams are for illustrative purposes only, actual connections may vary.

Optical transmitters and receivers

KTX - KRX

KTX optical transmitter converts an RF TV-SAT signal into an optical signal. KRX optical receiver converts the optical signal into a TV-SAT signal. SC/ACP connectors on the optical interface.



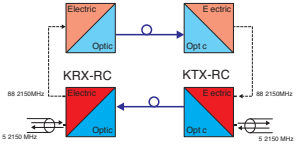
Item	Code	OPTICAL INTERFACE Wave length nm	Input power dBm	Output power dBm	Band width MHz	Return loss dB	Gain dB	RF SECTION Max. input level dBµV	Max. output level dBµV	Power consump. mA	Power supply V
KTX	270686	1310±20	-	6	47-2150	>12	-20	89 (88-860MHz)* 79 (950-2150MHz)	-	80	12
KRX	270677	1100±1600	-10 to +6	-	47-2150	>12	+25	-	94 (88-860MHz)** 84 (950-2150MHz)	150	12

* Set input level to obtain the fo lowing performances from the output of the KRX reciever w th optic input 0dBm TV band SNR>51dB, CSO< 60dBc, CTB< 60dBc (42 CENELEC channels) SAT band C/IMD>35dB (30 transponders)
** Optic input 0dBm received from KTX

Optical transmitters and receivers with return channel

KTX-RC - KRX-RC

KTX-RC optical transmitter converts the return channel signal into an optical signal and mixes the TV-SAT signal. KRX-RC optical receiver converts the optical return path into electrical signals and demixes the TV-SAT signal. SC/ACP connectors on the optical interface.



Item	Code	OPTICAL INTERFACE Wave length nm	Input power dBm	Output power dBm	Band width MHz	Diplexer MHz	Return loss dB	Gain dB	RF SECTION Max. input level dBµV	Max. output level dBµV	Power consump. mA	Power supply V
KTX-RC	270671	1310±20	-	0	5-65	5-65/88-2150	>10	-24	96 (5-65MHz)*	-	160	12
KRX-RC	270672	1100-1600	-10 to 0	-	5-65	5-65/88-2150	>10	+28	-	93 (5-65MHz)*	90	12

* Set up level to have IM2 and IM3< 47dBc with two tones as per specifications EUROINCSIG

Optical splitters

KSP.. and SIG76.. Series

KSP1_2 and SIG7622 split the optical signals into two outputs, KSP1_4 and SIG7624 into four outputs. These items can be installed anywhere in the distribution network without using a power supply.

Item	Code	OPTICAL INTERFACE Wave length nm	No. of outputs	Insertion loss dB	Return loss dB	Isolation dB	Connector type
KSP1_2	270679	1310, 1550	2	3.2	>45	>45	SC/ACP
KSP1_4	270680	1310, 1550	4	6.4	>45	>45	SC/ACP
SIG7622	270687	1310, 1550	2	3.2	>50	>50	SC/ACP
SIG7624	270688	1310, 1550	4	6.4	>50	>50	SC/ACP

Fibre optic solutions

Fibre optic cables

OPC.. Series

OPC4..
OPC8..
OPC12..
PRY-OPC..

Cables for indoor and outdoor applications.

Item	Code	Description
OPC40M	289397	Cable with 4 singlemode fibres for indoor and outdoor applications.
OPC80M	289401	Cable with 8 singlemode fibres for indoor and outdoor applications.
OPC120M New	287106	Cable with 12 singlemode fibres for indoor and outdoor applications.
OPC40MA	289400	Cable with 4 singlemode fibres for outdoor applications. Metal armour for rodent protection.
OPC80MA	289399	Cable with 8 singlemode fibres for outdoor applications. Metal armour for rodent protection.
OPC120MA New	287107	Cable with 12 singlemode fibres for outdoor applications. Metal armour for rodent protection.
OPC4I0M1	289692	Cable with 4 singlemode fibres for indoor and outdoor applications - 1050m
OPC4I0M2	289693	Cable with 4 singlemode fibres for indoor and outdoor applications - 2100m
OPC8I0M1	289691	Cable with 8 singlemode fibres for indoor and outdoor applications - 1050m
OPC8I0M2	289694	Cable with 8 singlemode fibres for indoor and outdoor applications - 2100m
OPC12IOM2 New	287108	Cable with 12 singlemode fibres for indoor and outdoor applications – 2100m
PRY-OPC4OA New	287112	Cable with 4 fibres for outdoor applications. Armored cables.
PRY-OPC8OA New	287113	Cable with 8 fibres for outdoor applications. Armored cables.
PRY-OPC12OA New	287114	Cable with 12 fibres for outdoor applications. Armored cables.
PRY-OPC4IOM2 New	287118	Cable with 4 fibres for indoor and outdoor applications - 2000m
PRY-OPC8IOM2 New	287119	Cable with 8 fibres for indoor and outdoor applications - 2000m
PRY-OPC12IOM2 New	287220	Cable with 12 fibres for indoor and outdoor applications - 2000m
PRY-OPC4IO New	287115	Cable with 4 fibres for indoor and outdoor applications.
PRY-OPC8IO New	287116	Cable with 8 fibres for indoor and outdoor applications.
PRY-OPC12IO New	287117	Cable with 12 fibres for indoor and outdoor applications.

Accessories

Patch cables, adaptor and fibre organiser

Item	Code	Description	
BR2-AA	289360	Singlemode patch cables/2m with connectors. SC/APC-SC/APC.	
BR4-AA	289362	Singlemode patch cables/4m with connectors. SC/APC-SC/APC	
BFO-SC-APC	289349	Adaptor for single mode angled connectors. For mounting in a patch panel. Extremely compact fibre organiser (12 positions).	
OPO12P	289402	Developed to ensure the best position for fibre optic cables. Plastic casing - Dimensions : 150x95x10mm	

Accessories

Splice boxes

Wall and rack mounting solution.

OPB24I
OPB8I

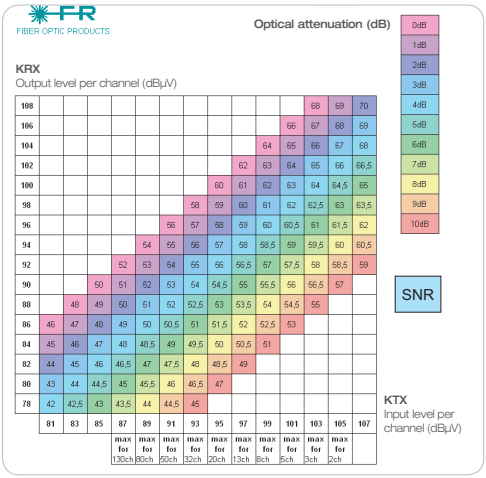
OPB24IR

Item	Code	Casing	Dimensions mm	Positions	Notes
OPB24I	289403	Painted steel	365x320x100	24 positions	For inserting additional optical cables
OPB8I	289405	Painted steel	160x140x50	8 positions	For inserting additional optical cables
OPB24IR	289404	Painted steel	240x43x223	19" Rack - 24 positions	For inserting additional optical cables

Quick reference guide for optical link design

This guide should be used in order to obtain optimum performance from your FRACARRO optical system.

STEP 1:
You need to know the number of inputs and the optical attenuation. Firstly, ensure you know what you are transmitting: how many analogue terrestrial channels, how many SAT transponders etc. For example, 20 analogue terrestrial channels, 6 digital terrestrial transponders and 30 SAT transponders. You will then need to know the amount of optical loss between the KTX and the KRX (for example, if there is a 1x2 optical splitters and 5Km of fibre optic, the loss will be around 6dB).



STEP 2:
You need to determine the optimum input level. The critical point is always the transmission of analogue terrestrial channels. So, if we consider the 20 analogue channels from the previous example the bottom row of the table shows that no more than 95dBµV can be applied. If your headend equipment allows, set their power to this value; otherwise, ensure you do not exceed it. As a general rule, digital tansponders' power must be 10dB-15dB lower than analogue channels: in this example, their optimum setting is
80-85 dBµV per transponder.

STEP 3:
Then you need to calculate the SNR and output level. Considering an optical attenuation of 6dB (the middle green diagonal line) the SNR can be read at the intersection of the input level column and the optical attenuation diagonal. In the previous example, the SNR for analogue channels would be 53dB. The output level can then be read moving left until you reach the last column: in the example this would be 88dBµV for each analogue channel. For digital transponders similar considerations should be applied. If you set either the DTT or SAT transponders' power at 85dBµV, their SNR will be 43dB, and the output level will be 78dBµV.

Further examples are shown in the user guide: we recommend they are read carefully!

Multiswitches

More than 90 products are available in cascadable and compact versions and are characterised by the number of inputs (from 2 to 17) and outputs (from 4 to 24).

The large product range enables Fracarro to be the market leader and to fulfil any installation requirement. The right solution can be found for any location from small installations to medium and large systems.
The multiswitch systems by Fracarro are “green products” as they have been carefully designed to reduce energy consumption.

Multiswitches

Compact multiswitches

- SWI95.. Series 116
- SWI45.. Series 117
- SWI5..DC Series 118
- SWI9..DC Series 119
- SWI59..AS Series 120
- SWI517..AS Series 121

Cascadable multiswitches

- SWI44.. Series 122-123
- SWI35.. Series 124-125
- SWI85..PLUS Series 126-127
- SWI85..STPLUS Series 128
- SWI39.. Series 129
- SWI39AT 130
- SWI39..S Series 130
- SWI89..PLUS Series 131-132
- SWI317..S Series 133

Amplifiers

Headend amplifiers

- AMP Series 134

Line amplifiers

- SWA.. Series 135

Power supplies - Accessories

Power supplies 136

Accessories

- Splitters and taps 137
- Mini DiSEqc 137

Multiswitches

Compact multiswitches

SWI95.. Series

SWI9508/UK
SWI9512/UK
SWI9516/UK

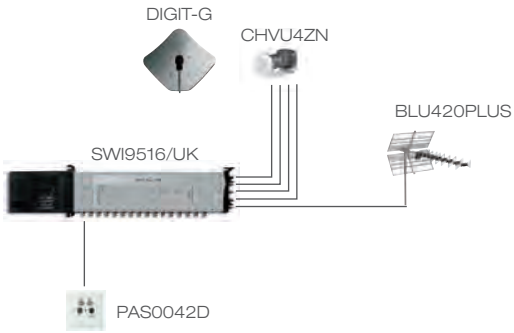
5 input compact adjustable multiswitches (4 SAT + 1 TV)

- TV gain adjustment
- 2 x SAT gain adjustments (high and low band)
- Fixed gain on the return path
- HD compliant
- 2A power supply for mixed systems (like SWI85... MSW cascadable series)
- Standard colour coding for easy installation

Item Code		SWI9508/UK 271106	SWI9512/UK 271107	SWI9516/UK 271108
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	12	16
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain	dB	5 to 10	5 to 10	3 to 9
Gain adjustment	dB	15	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)
TV				
Bandwidth	MHz	85-862	85-862	85-862
Gain	dB	2 to 5	2 to 5	1 to 4
Gain adjustment	dB	20	20	20
Maximum output level	dBµV	100 (-60dBc 3 tones)	100 (-60dBc 3 tones)	98 (-60dBc 3 tones)
Return path				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	8	7	6
Maximum output level	dBµV	108	108	108
General parameters				
LBN power supply	mA	1550	1450	1360
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	450	550	640
Dimensions (l x h x w)	mm	380x127x60	455x127x60	530x127x60
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Multiswitch to distibute up to 16 points

Combines satellite and terrestrial signals on to one cable. Attenuation control to adjust output levels, 8 and 12 way versions available.



All diagrams are for illustration purposes only, actual connections may vary.

Compact multiswitches

SWI45.. Series

SWI4508
SWI4512
SWI4516

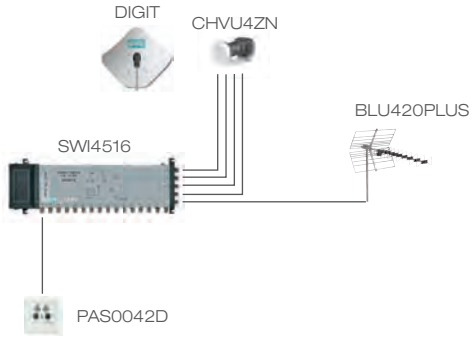
5 input compact multiswitches (4 SAT + 1 TV)

- Active TV/SAT band
- Compact size
- Switch mode power supply guarantees high reliability
- Return path included
- HD compliant
- Standard colour coding for easy installation

Item Code		SWI4508 271101	SWI4512 271102	SWI4516 271103
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	12	16
Bandwidth SAT	MHz	950-2150	950-2150	950-2150
Gain SAT	dB	0	0	0
Maximum output level SAT	dBµV	95	95	95
Bandwidth TV	MHz	85-862	85-862	85-862
Gain TV	dB	-4	-5	-6
Maximum output level TV	dBµV	95	95	95
Return path				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	-16	-17	-19
General parameters				
LNB power supply	mA, V	300, 14	300, 14	300, 14
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Dimensions (l x h x w)	mm	245x125x45	325x125x45	405x125x45
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Mains powered multiswitch to distribute up to 16 points

Combines satellite and terrestrial signals on to one cable, 8 and 12 way versions available.



All diagrams are for illustration purposes only, actual connections may vary.

Multiswitches

Compact multiswitches

SWI5..DC Series

SWI508DC
SWI516DC

GREEN PRODUCT

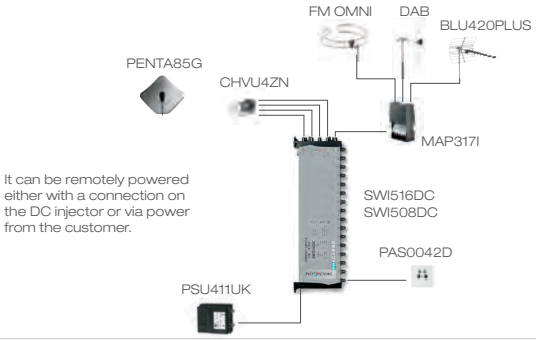
5 input compact multiswitches (4 SAT + 1 TV)

- The LNB and multiswitch can be powered from a decoder
- 12V automatic circuit to feed a masthead amplifier
- Additional connector to feed a high power masthead amplifier
- Compact size
- HD compliant

Item Code		SWI508DC 271115	SWI516DC 271117
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	16
SAT			
Bandwidth	MHz	950-2150	950-2150
Gain (tilt)	dB	-2 to 1	-2 to 1
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
TV			
Bandwidth	MHz*	5-862	5-862
Gain	dB	-14	-20
General parameters			
Switching control	V, KHz	14/18, 0/22	14/18, 0/22
Power consumption	mA	35	35
Dimensions (l x h x w)	mm	200x118x30	390x118x30
Operating temperature	°C	-10 to 55	-10 to 55

*Return path included

Remotely powered multiswitches



All diagrams are for illustration purposes only, actual connections may vary.

Compact multiswitches

SWI9..DC Series

New

SWI908DC
SWI916DC

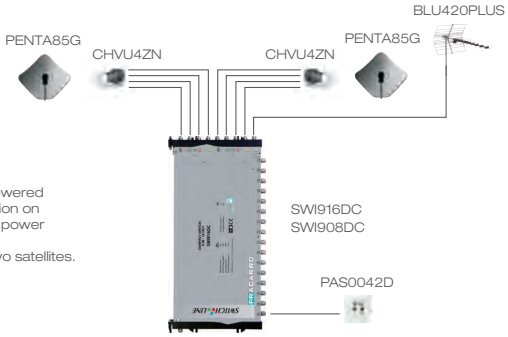
9 input compact multiswitches (8 SAT + 1 TV)

- Powered from STB
- Active/passive terrestrial gain
- Low power consumption
- Circuit for automatic detection and 12V supply current for terrestrial masthead amplifier
- Additional connector to supply current on terrestrial input when necessary
- High SAT output level – 105dBµV
- HD compliant

GREEN PRODUCT

Item Code		SWI908DC 271118	SWI916DC 271119
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		8	16
SAT			
Bandwidth	MHz	950-2150	950-2150
Gain	dB	-2 to 1	-2 to 1
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
TV			
Bandwidth	MHz	88-862	88-862
Gain (active/passive)	dB	0 / -16	-3 / -20
Maximum output level	dBµV	90 (-60dBc 3 tones)	90 (-60dBc 3 tones)
Return path (only when passive)			
Bandwidth	MHz	5-65	5-65
Gain	dB	-16	-20
General parameters			
Isolation SAT-SAT	dB	30	30
Switching control	V, KHz	14/18, 0/22	14/18, 0/22
Power consumption	mA	passive 60 (per output) active 60 (per output), 70 (TV amplifier)	passive 60 (per output) active 60 (per output), 70 (TV amplifier)
Dimensions (l x h x w)	mm	230x180x30	230x180x30
Operating temperature	°C	-10 to 55	-10 to 55

Remotely powered multiswitches



It can be remotely powered either with a connection on the DC injector or via power from the customer.
Signals taken from two satellites.

All diagrams are for illustration purposes only, actual connections may vary.

Multiswitches

Compact multiswitches

SWI59..AS Series

SWI5906AS - SWI5908AS
SWI5912AS - SWI5916AS

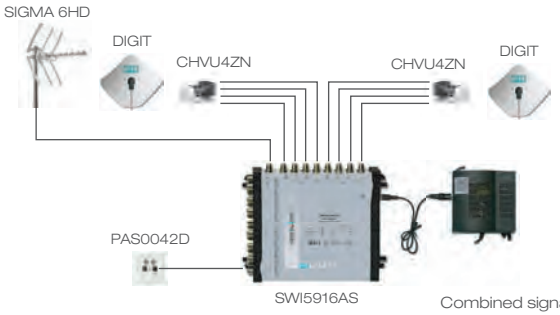
9 input compact multiswitches (8 SAT + 1 TV)

- Dip switch to select terrestrial active or passive path
- Standalone power supply for easier installation
- HD compliant
- Bandwidth up to 2300MHz
- Standard colour coding for easy installation

Item Code		SWI5906AS 287035	SWI5908AS 287036	SWI5912AS 287037	SWI5916AS 287038
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		6	8	12	16
SAT					
Bandwidth	MHz	950-2300	950-2300	950-2300	950-2300
Gain	dB	0	-2	-2	-3
Maximum output level	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
TV					
Bandwidth	MHz	47-862	47-862	47-862	47-862
Gain	dB	-7 (passive), 13 (active)	-7 (passive), 13 (active)	-10 (passive), 0 (active)	-10 (passive), 0 (active)
Maximum output level*	dBµV	100 (passive), 90 (active)	100 (passive), 90 (active)	100 (passive), 90 (active)	100 (passive), 90 (active)
General parameters					
LNB power supply	mA, V	1600, 12	1600, 12	1600, 12	1600, 12
Switching control	V, KHz	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	40	40	40	40
Dimensions (l x h x w)	mm	300x105x51	300x105x51	300x195x51	300x195x51
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60	-20 to 60

* -60dBc 3 tones

Mains powered multiswitch with switchable active/passive terrestrial gain



Combined signal from two satellites.
Also available as 6, 8 and 12 output versions.

All diagrams are for illustration purposes only, actual connections may vary.

Compact multiswitches

SWI517..AS Series

SWI51706AS
SWI51712AS
SWI51716AS

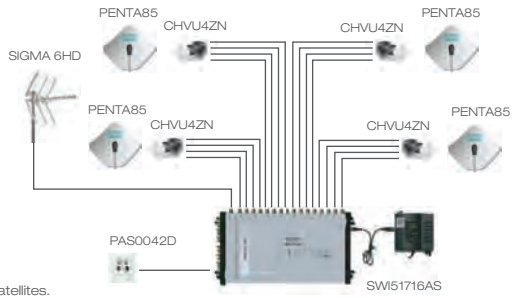
17 input compact multiswitches (16 SAT + 1 TV)

- Dip switch to select terrestrial active or passive path
- Standalone power supply for easier installation
- HD compliant
- Bandwidth up to 2300MHz
- Standard colour coding for easy installation

Item Code		SWI51706AS 287039	SWI51712AS 287040	SWI51716AS 287041
No. of inputs		17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)
No. of outputs		6	12	16
SAT				
Bandwidth	MHz	950-2300	950-2300	950-2300
Gain	dB	-3	-3	-5
Maximum output level	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
TV				
Bandwidth	MHz	47-862	47-862	47-862
Gain	dB	-7 (passive), +3 (active)	-10 (passive), 0 (active)	-10 (passive), 0 (active)
Maximum output level*	dBµV	100 (passive), 90 (active)	100 (passive), 90 (active)	100 (passive), 90 (active)
General parameters				
LNB power supply	mA, V	1600, 12	1600, 12	1600, 12
Switching control	V, KHz	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	60	60	60
Dimensions (l x h x w)	mm	430X105X51	430x195x51	430x240x51
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60

* -60dBc 3 tones

Mains powered multiswitch with switchable active/passive terrestrial gain



Combined signal from four satellites.
Also available as 6 and 12 output versions.

All diagrams are for illustration purposes only, actual connections may vary.

Multiswitches

Cascadable multiswitches

SWI44.. Series

SWI4404-00
SWI4404-08
SWI4404-17
SWI4404+12

SWI4406-00
SWI4406-08
SWI4406-17
SWI4406+12

SWI4408-00
SWI4408-08
SWI4408-17
SWI4408+12

4 input cascadable multiswitches (4 SAT)

- The LNB can be powered directly from the decoder
- Four different levels of attenuation -17dB, -8dB, 0dB and +12dB for signal balancing
- HD compliant
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation

New

Item Code		SWI4404-00 271081	SWI4404-08 271082	SWI4404-17 271083	SWI4404+12 271134
No. of inputs		4	4	4	4
No. of outputs		4	4	4	4
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2150
Gain (tilt)	dB	0	-8	-17	+12
Insertion loss	dB	2	2	2	3
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	-	105 (-3dBc 2 tones)
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	35	35	15	55
Dimensions (l x h x w)	mm	90x70x20	90x70x20	90x70x20	90x70x20
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

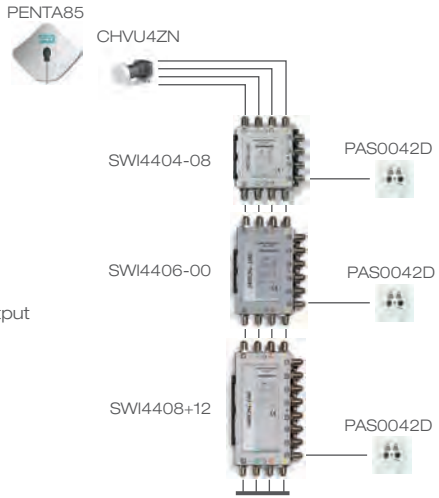
New

Item Code		SWI4406-00 271084	SWI4406-08 271085	SWI4406-17 271086	SWI4406+12 271135
No. of inputs		4	4	4	4
No. of outputs		6	6	6	6
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2150
Gain (tilt)	dB	0	-8	-17	+12
Insertion loss	dB	2	2	2	4
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	-	105 (-3dBc 2 tones)
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	35	35	15	55
Dimensions (l x h x w)	mm	119x70x20	119x70x20	119x70x20	119x70x20
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

New

Item Code		SWI4408-00 271087	SWI4408-08 271088	SWI4408-17 271089	SWI4408+12 271136
No. of inputs		4	4	4	4
No. of outputs		8	8	8	8
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2150
Gain (tilt)	dB	0	-8	-17	+12
Insertion loss	dB	3	3	3	5
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	-	105 (-35dBc 2 tones)
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	35	35	15	55
Dimensions (l x h x w)	mm	150x70x20	150x70x20	150x70x20	150x70x20
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Satellites only cascadable system



Powered by receiver.
Different losses on output of switch including -17dB, -8dB, 0dB and +12dB.

All diagrams are for illustration purposes only, actual connections may vary.

Multiswitches

Cascadable multiswitches

SWI35.. Series

SWI3504P.
SWI3504A10
SWI3504A.
SWI3504T.

SWI3506P.
SWI3506A10
SWI3506A.
SWI3506T.

SWI3508P.
SWI3508A10
SWI3508A.
SWI3508T.

5 input cascadable multiswitches (4 SAT + 1 TV)

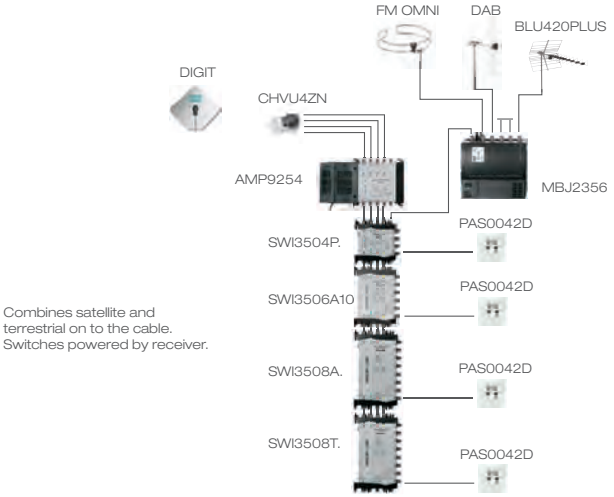
- Three different levels of attenuation -17dB, -8dB and 0dB for signal balancing
- Terminal version available with 0dB attenuation
- Return path included on all switches
- With the MiniDiSEqC and Tool Kit it is possibile to distribute up to 4 satellites (16 polarities) + TV
- The MiniDiSEqC with 2 SAT inputs has a dip-switch to select the main satellite input
- HD compliant
- Standard colour coding for easy installation

Item Code		**SWI3504P.** 271013-C	**SWI3504A10** 271008	**SWI3504A.** 271011-C	**SWI3504T.** 271015-C
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		4	4	4	4
Gain SAT (tilt)	dB	-20 to -16	-8	-2 to 1	-1 to 2
Insertion loss SAT	dB	-2	-2	-2	-
Maximum output level SAT	dBµV	-	110 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Tap loss TV	dB	-19	-15	-15	-12
Through loss TV	dB	-2.5	-3	-3.5	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	15	40	35	35
Dimensions (l x h x w)	mm	120x118x30	120x118x30	120x118x30	120x118x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Item Code		**SWI3506P.** 271014-C	**SWI3506A10** 271009	**SWI3506A.** 271012-C	**SWI3506T.** 271016-C
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		6	6	6	6
Gain SAT (tilt)	dB	-21 to -16	-8	-3 to 1	-2 to 2
Insertion loss SAT	dB	-2.5	-2.5	-2.5	-
Maximum output level SAT	dBµV	-	110 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Tap loss TV	dB	-19	-15	-15	-13
Through loss TV	dB	-4	-4.5	-5	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	15	40	35	35
Dimensions (l x h x w)	mm	160x118x30	160x118x30	160x118x30	160x118x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Item Code		SWI3508P. 271018-C	SWI3508A10 271010	SWI3508A. 271017-C	SWI3508T. 271019-C
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	8	8	8
Gain SAT (tilt)	dB	-21 to -16	-8	-2 to 1	-2 to 1
Insertion loss SAT	dB	-3.5	-3.5	-3.5	-
Maximum output level SAT	dBµV	-	110 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Tap loss TV	dB	-25	-22	-22	-14
Through loss TV	dB	-1	-3	-3	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	15	40	35	35
Dimensions (l x h x w)	mm	200x118x30	200x118x30	200x118x30	200x118x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Mini cascadable system - For small and medium systems



Combines satellite and terrestrial on to the cable. Switches powered by receiver.

All diagrams are for illustration purposes only, actual connections may vary.

Multiswitches

Cascadable multiswitches

SWI85..PLUS Series

SWI8508PLUS
SWI8512PLUS
SWI8516PLUS

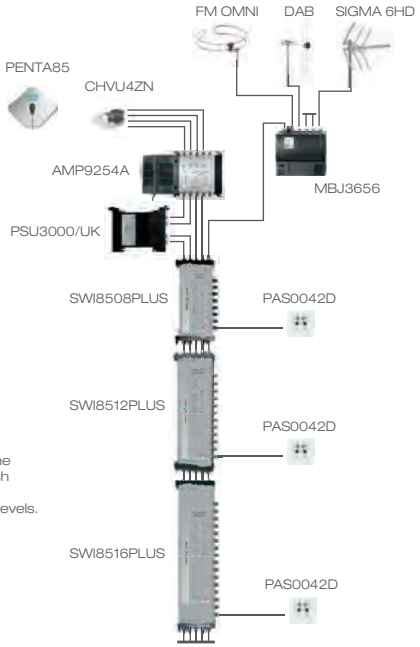
5 input cascadable adjustable multiswitches (4 SAT + 1 TV)

- Optimised energy consumption
- Capable of 100m drop length
- Very high isolation (45dB)
- Very high electrical performance
- TV gain adjustment
- 2 x SAT gain adjustments (high and low band)
- Fixed gain on the return path
- HD compliant
- Can be used with SWI95.. to create a mixed system
- Standard colour coding for easy installation

GREEN PRODUCT

Item Code		SWI8508PLUS 271055	SWI8512PLUS 271056	SWI8516PLUS 271063
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	12	16
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain (tilt)	dB	-4 to 0	-4 to 0	-3 to 1
Gain adjustment	dB	15	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)	108 (-35dBc 2 tones)
Through loss	dB	2	2.5	2.5
TV				
Bandwidth	MHz	85-862	85-862	85-862
Gain (tilt)	dB	-8 to -4	-8 to -4	-9 to -5
Gain adjustment	dB	20	20	20
Maximum output level	dBµV	100 (-60dBc 3 tones)	100 (-60dBc 3 tones)	97 (-60dBc 3 tones)
Through loss	dB	1.5	2	2
Return path				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	-4	-5	-6
Maximum output level	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
Through loss	dB	1	1	1
General parameters				
Power supply	V	14-18	14-18	14-18
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	280 (14V), 220 (18V)	280 (14V), 220 (18V)	280 (14V), 220 (18V)
Dimensions (l x h x w)	mm	260x120x30	340x120x30	425x120x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

IRS cascadable system - For medium and large systems



The system can be powered from the headend via the PSU3000/UK, which has built-in twin power inserters. Attenuation control to adjust output levels.

All diagrams are for illustration purposes only, actual connections may vary.

Multiswitches

Cascadable multiswitches

SWI85..STPLUS Series

SWI8524STPLUS
SWI8532STPLUS

5 input cascadable multiswitches (4 SAT + 1 TV)

- Optimised energy consumption
- Capable of 100m drop length
- Very high isolation (45dB)
- Very high electrical performance
- TV gain adjustment
- 2 x SAT gain adjustments (high and low band)
- Fixed gain on the return path
- HD compliant
- Can be used with SWI95.. to create a mixed system
- Standard colour coding for easy installation

GREEN PRODUCT

Item		SWI8524STPLUS 271057	SWI8532STPLUS 271058
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		24	32
SAT			
Bandwidth	MHz	950-2150	950-2150
Gain (tilt)	dB	-6 to 0	-5 to +1
Gain adjustment	dB	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	108 (-35dBc 2 tones)
Through loss	dB	5	5
TV			
Bandwidth	MHz	85-862	85-862
Gain (tilt)	dB	-9 to -6	-11 to -5
Gain adjustment	dB	20	20
Maximum output level	dBµV	100 (-60dBc 3 tones)	97 (-60dBc 3 tones)
Through loss	dB	4	4
Return path			
Bandwidth	MHz	5-65	5-65
Gain	dB	-5	-6
Maximum output level	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
Through loss	dB	2	2
General parameters			
Power supply	V	14-18	14-18
Switching control	V, KHz	14/18, 0/22	14/18, 0/22
Power consumption	mA	560 (14V), 440 (18V)	560 (14V), 440 (18V)
Dimensions (l x h x w)	mm	352x120x60	440x120x60
Operating temperature	°C	-10 to 55	-10 to 55

Cascadable multiswitches

SWI39.. Series

SWI3906P
SWI3906A

SWI3908P
SWI3908A

9 input cascadable multiswitches (8 SAT + 1 TV)

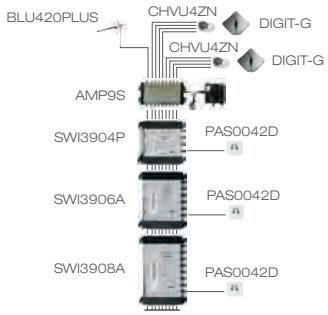
- 2 types: Passive SAT and Active SAT
- Dip-switch for each output to set the main satellite
- Return path included on all switches
- HD compliant
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation

Item Code		SWI3906P 271025	SWI3906A 271024
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		6	6
Gain SAT (tilt)	dB	-22 to -17	-3 to 0
Insertion loss SAT	dB	-3	-3
Maximum output level SAT	dBµV	-	105 (-35dBc 2 tones)
Tap loss TV	dB	-19	-16
Through loss TV	dB	-3	-4
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	35	50
Dimensions (l x h x w)	mm	170x125x52	170x125x52
Operating temperature	°C	-10 to 55	-10 to 55

Item Code		SWI3908P 271028	SWI3908A 271027
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		8	8
Gain SAT (tilt)	dB	-21 to -16	-2 to 0
Insertion loss SAT	dB	-3	-3
Maximum output level SAT	dBµV	-	105 (-35dBc 2 tones)
Tap loss TV	dB	-25	-22
Through loss TV	dB	-2	-3
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	35	50
Dimensions (l x h x w)	mm	210x125x52	210x125x52
Operating temperature	°C	-10 to 55	-10 to 55

Mini cascadable system - For small and medium systems

Combines two satellite and terrestrial on to one cable. Switches powered by receiver.



All diagrams are for illustration purposes only, actual connections may vary.

Multiswitches

Cascadable multiswitches

SWI39AT

SWI39AT

Adjustable tap

- Enables the creation of a 9 input active TV system
- Adjustable gain on SAT/Terrestrial tap outputs
- Low insertion loss on trunk path
- Active return channel
- HD compliant
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation

Item Code		SWI39AT 271020
No. of inputs		9 (8 SAT + 1 TV)
No. of outputs		9
No. of tapped outputs		9
Bandwidth SAT	MHz	950-2150
Gain SAT (tilt)	dB	-2 to 0
Gain adjustment SAT	dB	15
Maximum output level SAT	dBµV	116 (-35dBc 2 tones)
Through loss SAT	dB	1.5
Bandwidth TV	MHz	85-862
Gain TV	dB	10 to 15
Gain adjustment TV	dB	15
Maximum output level TV	dBµV	116 (-60dBc 2 tones)
Through loss TV	dB	1.5
Return path		
Bandwidth	MHz	5-65
Gain	dB	12
Maximum output level	dBµV	104 (-35dBc 2 tones)
Through loss	dB	1.5
General parameters		
Power consumption	mA	320 (14V)
Dimensions (l x h x w)	mm	170x140x60
Operating temperature	°C	-10 to 55

Cascadable multiswitches

SWI39..S Series

SWI3906S - SWI3908S
SWI3912S - SWI3916S

9 input cascadable multiswitches (8 SAT +1 TV)

- Isolation between outputs >30dB
- Cost effective
- HD compliant
- Bandwidth up to 2300MHz
- Standard colour coding for easy installation

Item Code		SWI3906S 289783	SWI3908S 289784	SWI3912S 289785	SWI3916S 289786
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		6	8	12	16
Bandwidth SAT	MHz	950-2300	950-2300	950-2300	950-2300
Gain SAT	dB	0	0	-2	-2
Maximum output level SAT	dBµV	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)
Insertion loss SAT	dB	2	2	4	4
Bandwidth TV	MHz*	5-862	5-862	5-862	5-862
Gain TV	dB	-17	-17	-21	-21
Through loss TV	dB	4	4	4	4
General parameters					
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	40	40	40	40
Dimensions (l x h x w)	mm	215x105x40	215x105x40	215x195x40	215x195x40
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60	-20 to 60

*Return path included

Cascadable multiswitches

SWI89..PLUS Series

SWI8908PLUS
SWI8912PLUS
SWI8916PLUS

9 input cascadable adjustable multiswitches (8 SAT +1 TV)

- Optimised energy consumption
- Capable of 100m drop length
- Very high isolation (45dB)
- Very high electrical performance
- TV gain adjustment
- 2 x SAT gain adjustments (high and low band)
- Fixed gain on the return path
- HD compliant
- Can be used with SWI95.. to create a mixed system
- Standard colour coding for easy installation

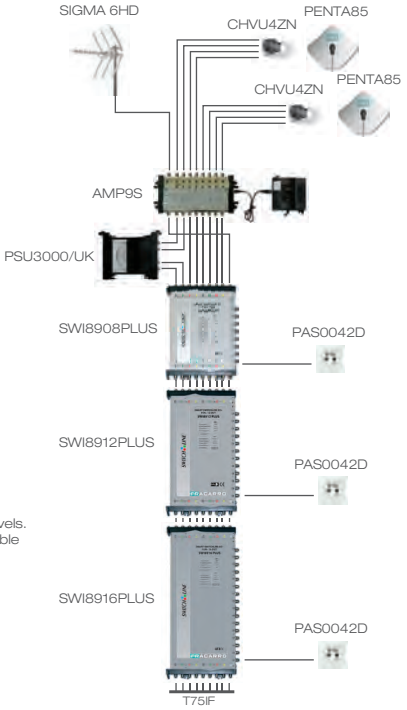
GREEN PRODUCT

Item		SWI8908PLUS	SWI8912PLUS	SWI8916PLUS
Code		271067	271068	271069
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		8	12	16
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain	dB	-3 to 3	-4 to 2	-6 to 0
Gain adjustment	dB	15	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)
Through loss	dB	2	2,5	3
TV				
Bandwidth	MHz	85-862	85-862	85-862
Gain	dB	-7 to -3	-9 to -4	-11 to -5
Gain adjustment	dB	20	20	20
Maximum output level	dBµV	100 (-60dBc 3 tones)	100 (-60dBc 3 tones)	100 (-60dBc 3 tones)
Through loss	dB	2	2	2
Return path				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	-3	-5	-7
Maximum output level	dBµV	95	97	97
Through loss	dB	1	2	2
General parameters				
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	350(14V), 280(18V)	350(14V), 280(18V)	350(14V), 280(18V)
Mains voltage	V	14 - 18	14 - 18	14 - 18
Dimensions (l x h x w)	mm	260x180x30	340x180x30	425x180x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Multiswitches

Cascadable multiswitches

IRS cascadable system - For medium and large systems



The system can be powered from the headend via the PSU3000/UK, which has built-in twin power inserters. Attenuation control to adjust output levels. Allows two satellite signals to be available on a single cable.

All diagrams are for illustration purposes only, actual connections may vary.

Cascadable multiswitches

SWI317..S Series

SWI31706S
SWI31712S
SWI31716S

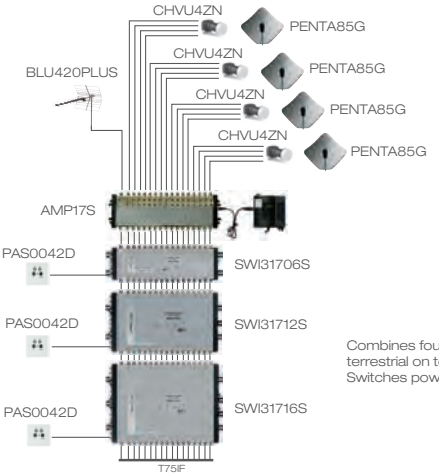
17 input cascadable multiswitches (16 SAT + 1 TV)

- Isolation between outputs >30dB
- Cost effective
- HD compliant
- Bandwidth up to 2300MHz
- Standard colour coding for easy installation

Item Code		SWI31706S 289780	SWI31712S 289781	SWI31716S 289782
No. of inputs		17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)
No. of outputs		6	12	16
SAT				
Bandwidth	MHz	950-2300	950-2300	950-2300
Gain	dB	-3	-4	-5
Maximum output level	dBµV	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)
Insertion loss	dB	3	4	4
TV				
Bandwidth	MHz*	5-862	5-862	5-862
Gain	dB	-17	-21	-21
Through loss	dB	4	4	4
General parameters				
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	60	60	60
Dimensions (l x h x w)	mm	345x105x40	345x195x40	345x240x40
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60

*Return path included

Mini cascadable system - For small and medium systems



Combines four satellites and terrestrial on to one cable. Switches powered by receiver.

All diagrams are for illustration purposes only, actual connections may vary.

Amplifiers

Headend amplifiers

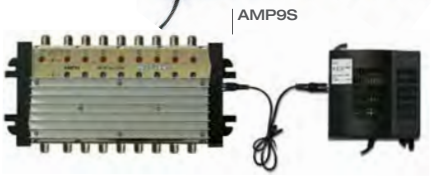
AMP Series

AMP9254
Headend amplifier with 5 inputs (4 SAT + 1 TV)
- Gain adjustment for each SAT input
- For small and medium systems
- 400mA to power the LNB

AMP9254A
Headend amplifier with 5 inputs (4 SAT + 1 TV)
- Tilt and gain adjustment for each SAT input
- There is a connector to insert DC on lines 1 and 2
- For medium and large systems or where there are long distances between switches
- 400mA to power the LNB

AMP9294
Headend amplifier with 9 inputs (8 SAT + 1 TV)
- Gain adjustment for each SAT input
- For small and medium systems
- 600mA to power the LNB

AMP9S, AMP17S
Headend amplifiers with 9 inputs (8 SAT + 1 TV) and 17 outputs (16 SAT + 1 TV)
- Tilt and gain adjustment for each SAT input
- Gain adjustment for TV input
- High maximum output level
- Bandwidth up to 2300MHz
- 1800mA to power the LNB



Item Code		AMP9254 271031	AMP9254A 271033	AMP9294 271032	AMP9S 289778	AMP17S 289779
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	17 (16 SAT + 1 TV)
SAT						
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2300	950-2300
Gain adjustment	dB	19-25 (fixed tilt)	32	20-24 (fixed tilt)	27	27
Reg. gain	dB	15	15	15	10	10
Tilt adjustment	dB	-	12	-	4	4
Maximum output level	dBµV	112	116	112	115	115
TV						
Bandwidth	MHz	5-862	5-862	5-862	47-862	47-862
Gain	dB	-1	-1	-1	30	30
Gain adjustment	dB	-	-	-	10	10
Maximum output level	dBµV	-	-	-	114	114
General parameters						
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60	220-240, 50-60	220-240, 50-60
LBN power supply	mA, V	400, 14	400, 14	600, 14	1800, 12	1800, 12
Dimensions (l x h x w)	mm	235x125x65	235x125x65	320x125x65	350x130x90	430x130x90
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-20 to 60	-20 to 60

SWA.. Series

SWA5424
SAT line amplifier with 4 SAT inputs
- Tilt and gain adjustment for each SAT input
- For medium and large systems
- Remote power supply through SAT trunk 1 (V/L) and 2 (H/L)

SWA5414
SAT line amplifier with 4 SAT inputs
- Fixed gain
- For small and medium systems
- Can be powered directly through the DC F connector or by using an external power supply connected to the trunk line 1 (V/L)

SWA5122
Line amplifier with 2 inputs (1 SAT + 1 TV)
- Tilt and gain adjustment on TV line
- Return path gain adjustment
- For small and medium systems
- Remote power supply through SAT trunk line

Item Code		SWA5424 271034	SWA5414 271036	SWA5122 271035
No. of inputs		4 SAT	4 SAT	2 (1 SAT + 1 TV)
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain	dB	25	12 to 16	-1
Gain adjustment	dB	15	-	-
Tilt adjustment	dB	15	-	-
Maximum output level	dBµV	116	108	-
Noise figure	dB	8	8	-
TV				
Bandwidth	MHz	-	-	85-862
Gain	dB	-	-	30
Reg. gain	dB	-	-	15
Gain adjustment	dB	-	-	15
Maximum output level	dBµV	-	-	116
Noise figure	dB	-	-	8
Return path				
Bandwidth	MHz	-	-	5-65
Gain	dB	-	-	15
Gain adjustment	dB	-	-	10
Maximum output level	dBµV	-	-	106
Noise figure	dB	-	-	7
General parameters				
Power supply	V	14-30	5-18	14-30 on SAT
Power consumption	mA, V	300, 14	120, 14	400, 14
Dimensions (l x h x w)	mm	198x108x30	90x90x20	198x108x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Power supplies - Accessories

Power supplies

AMP8331 | AMP2000/UK | SPS1750 | PSU3000/UK

AMP8331
Power supply with DC inserter
- 18Vcc 3A output voltage
- Supplied with 220-240V~, 50-60Hz.

AMP2000/UK
Power supply with DC inserter
- 14Vcc 2A output voltage
- Supplied with 220-240V~, 50-60Hz.

SPS1750
Power supply with DC inserter
- 15Vcc 0.5A output voltage
- Supplied with 220-240V~, 50-60Hz.

PSU3000/UK
Power supply with 2 DC inserters
- 18Vcc 3A output voltage
- Supplied with 220-240V~, 50-60Hz.

Item Code		AMP8331* AMP8331	AMP2000/UK 271140	SPS1750 289087	New PSU3000/UK 271142
Bandwidth	MHz	5-2150	5-2400	40-2150	5-2400
Output voltage	V	18	14	15	18+18
Output current	A	3	2	0.5	3 (total)
Through loss	dB	1.5	1.5	1	1.5
General parameters					
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60	220-240, 50-60
Isolation	Class	II	II	II	II
Connector	Type	F	F	F	2 x F
Dimensions (l x h x w)	mm	140x400x80	185x100x60	60x90x100	165x63x107
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

* with UK plug

Accessories

Splitters and taps

SWI44SP2
SWI44T15

SWI85SPL2
SWI85T15

- SWI44T15 Tap: DC pass on each trunk line
- SWI44SP2 Splitter: DC pass from output ports to input port on each polarisation
- SWI85T15 Tap: DC pass on each SAT line
- SWI85SPL2 Splitter: DC pass on each SAT line
- Additional F connector for power injection on each SAT input/output
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation

New

Item Code		SWI44SP2 271091	SWI44T15 271092	SWI85SPL2 271096	SWI85T15 271095
No. of inputs		4 SAT	4 SAT	5 (4 SAT +1 TV)	5 (4 SAT +1 TV)
No. of outputs		4+4	4+4	5+5	5+5
Bandwidth SAT	MHz	950-2150	950-2150	950-2150	950-2150
Gain SAT	dB	-	-16 to -13	-4.5	-12
Insertion loss SAT	dB	-4.5	-1	-	-2
Bandwidth TV	MHz	5-862	5-862	5-862	5-862
Gain TV	dB	-	-	-4.5	-12
Insertion loss TV	dB	-	-	-	-2
General parameters					
Isolation SAT-SAT	dB	≥ 30	≥ 30	≥ 30	≥ 30
Isolation SAT-TV	dB	≥ 30	≥ 30	≥ 30	≥ 30
Dimensions (l x h x w)	mm	90x70x20	90x70x20	198x108x30	198x108x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Accessories

Mini DiSEqC

SWI1201B
SWI1401B

SWM1305A

- Accessory for modular 8 SAT or 16 SAT solutions + terrestrial

Item Code		SWI1201B 271071	SWI1401B 271072	SWM1305A 271000
No. of inputs		2	4	Kit to combine SWI35.. Multiswitches and Mini DiSEqC
Input	A	SAT + TV	SAT + TV	
Input	B	SAT	SAT	
Input	C	-	SAT	
Input	D	-	SAT	
No. of outputs		1	1	
SAT				
Bandwidth	MHz	950-2150	950-2150	
Insertion loss	dB	-1.5	-1.5	
TV				
Bandwidth	MHz	5-862	5-862	
Insertion loss	dB	-2	1.5	
Power consumption	mA	25	25	
Dimensions (lxhxd)	mm	80x55x45	155x55x45	
Operating temperature	°C	-10 to 55	-10 to 55	

Distribution components

A wide range of distribution products to complete the system.

These solutions, with their excellent performance and original mechanics, are designed to make installation easier and more reliable. A few examples are splitters and taps for MATV and SMATV installations with F connector and clamp versions and a wide range of outlets with 1, 2 or more outputs for TV, SAT, FM, DATA signals and return channel.

Splitters and taps

Clamp distribution components
- 5-2400MHz 140-141
- Accessories 141

Distribution components with F connectors
- 5-2400MHz 142-145
- 950-2150MHz 145
- 5-1000MHz 146-147
- 5-862MHz 148-149

Outlets

5-2400MHz outlets
- SPI.. and SPF.. Series 150

Wall outlets TV + SAT + FM 151

Connectors

Connectors
- I.E.C. coaxial connectors 151
- F connectors 152

Accessories
- 75 Ohm loads - Adaptors - Cables 153

Splitters and taps

Clamp distribution components

5-2400MHz

CAD S

To complete the Fracarro range of distribution components the CAD S range has been designed. Their patented features make them reliable and easy to install. They guarantee superb shielding (class A) and excellent impedance matching. CAD S splitters and taps (1, 2 or 4 way) are the result of an intensive development project and are one of-a-kind with a UBB input to enable single cable connection.

Class A shielding

SPLITTERS

Item	Code	Splitters	Insertion loss dB					Output-output isolation dB				
			RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz	RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz
PP2	220802	2 way	4	4	4.5	5	5.5	25	22	20	20	18
PP3	220803	3 way	6.5	6.5	6.5	7	8	20	20	20	20	18
PP4	220804	4 way	9.5	9.5	10	10.5	11	20	25	25	20	18
PP5	220805	5 way	11	11	11.5	12	13	20	25	25	22	18

1 WAY TAPS

Item	Code	Insertion loss dB					Tap loss dB					Output-tap isolation dB				
		RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz	RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz	RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz
CD1-10	220810	1.8	1.6	2	2.3	2.6	10	10	10	10	10	28	30	30	28	32
CD1-14	220814	0.8	0.8	1.3	1.5	2	14.5	14.5	14.5	14.5	14	30	33	25	25	24
CD1-18	220818	0.8	0.8	1.3	1.5	2	18	18	17.5	18	18	32	35	30	27	24
CD1-22	220822	0.8	0.8	1.3	1.5	2	22	22	21.5	22	22	36	40	35	30	27

2 WAY TAPS

Item	Code	Insertion loss dB					Tap loss dB					Output-tap isolation dB				
		RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz	RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz	RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz
CD2-10	220830	3.5	3	3.3	4.2	4.7	11	10	10.5	10.5	11	25	28	23	20	18
CD2-14	220834	1.6	1.5	2.5	2.7	3.5	15	15	14.5	14.5	14.5	30	35	25	23	23
CD2-18	220838	2.6	1.5	2.5	2.7	3.5	18	18	18	18	18	32	37	28	26	26
CD2-22	220842	1.6	1.5	2.5	2.7	3.5	22	22	22	22	22	35	40	32	30	30

4 WAY TAPS

Item	Code	Insertion loss dB					Tap loss dB					Output-tap isolation dB				
		RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz	RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz	RC 5-40 MHz	TV 47-862 MHz	950-1750 MHz	SAT 1750-2150 MHz	2150-2400 MHz
CD4-12	220852	4	3.7	4.5	5.5	6.5	13	12	12	12.5	13	27	27	27	25	25
CD4-14	220854	3.5	3.3	3.7	4.5	5	14	14	14.5	14.5	14.5	30	30	30	25	25
CD4-18	220858	1.6	1.5	2.5	3.5	4	19	18	18	18	18	33	35	33	30	25
CD4-22	220862	1.6	1.5	2.5	3.3	3.8	22	22	22	22	22	37	38	37	35	32

Clamp distribution components

Accessories

Indoor and outdoor boxes for CAD S.

BIC

BOC

ARD

Item	Code	Description
BIC	220800	Indoor box for CAD S
BOC	220801	Outdoor box for CAD S
ARD	220891	Din rail adaptor for CAD S

Splitters and taps

Distribution components with F connectors

5-2400MHz

These taps and splitters have been designed to be used in TV and Satellite distribution systems. Their compact design enable them to be installed in many locations.
Their main features are: die cast metal housing, low insertion loss, high isolation and return loss, F connectors, earthing screw and wall fixing.

SPLITTERS

Item	Code	Splitters	Insertion loss dB						Output-output isolation dB					
			5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
PA2	280701	2 way	< 4	< 4	< 4.5	< 5.5	< 5.5	< 6	> 22	> 22	> 20	> 20	> 20	> 23
PA3	280703	3 way	< 7	< 8	< 8	< 10	< 10.5	< 11	> 22	> 22	> 22	> 22	> 22	> 22
PA4	280702	4 way	< 7.5	< 8.5	< 9	< 11	< 11.5	< 12	> 30	> 30	> 25	> 26	> 22	> 22
PA6	280704	6 way	< 10.5	< 10.5	< 12	< 13.5	< 14.5	< 16	> 22	> 22	> 22	> 22	> 22	> 22
PA8	280705	8 way	< 12	< 12	< 13.5	< 15.5	< 16.5	< 17	> 20	> 20	> 20	> 20	> 20	> 20

1 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE1-10	280710	< 1.5	< 1.3	< 1.3	< 1.6	< 2	< 2	10.5	10.5	10.5	11	11	11	> 40	> 35	> 32	> 27	> 24	> 24
DE1-14	280711	< 1	< 0.8	< 0.8	< 1.2	< 1.3	< 1.5	14	14	14	14	14	14	> 32	> 29	> 28	> 28	> 30	> 25
DE1-18	280712	< 0.8	< 0.7	< 0.7	< 0.9	< 1	< 1.3	18.5	18.5	18.5	18.5	18	17.5	> 45	> 36	> 31	> 31	> 27	> 22
DE1-22	280713	< 0.6	< 0.6	< 0.5	< 0.8	< 1	< 1.7	22	22	22	22	22	22	> 50	> 38	> 33	> 33	> 31	> 27

2 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE2-10	280714	< 2.5	< 2.5	< 2.5	< 2.5	< 2.8	< 3.5	10	10	10	10	11	11.5	> 25	> 28	> 28	> 25	> 25	> 23
DE2-14	280715	< 1.5	< 1.5	< 1.5	< 1.8	< 2	< 2.2	14	14	14	14	14	14	> 35	> 29	> 25	> 25	> 23	> 23
DE2-18	280716	< 1.2	< 1.2	< 1.2	< 1.5	< 1.8	< 2	18	18	18	18	18	19	> 45	> 35	> 30	> 27	> 27	> 25
DE2-22	280717	< 1.2	< 1.2	< 1.1	< 1.5	< 1.8	< 2.2	22	22	22	22	22	22	> 45	> 40	> 35	> 31	> 27	> 27

4 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE4-12	280718	< 3.5	< 3.5	< 4.3	< 5.1	< 5.2	< 5.4	11.5	11.5	11.5	13	14	15.5	> 35	> 35	> 30	> 28	> 28	> 28
DE4-14	280719	< 2.5	< 2.3	< 2.5	< 3	< 3.5	< 4	14.5	14	13.5	14	14.5	15	> 32	> 32	> 35	> 30	> 27	> 30
DE4-18	280720	< 1.5	< 1.3	< 1.3	< 1.5	< 1.8	< 2	18	18	18	18.5	19	19	> 45	> 45	> 45	> 35	> 30	> 30
DE4-22	280721	< 1	< 1	< 1	< 1.2	< 1.5	< 1.5	21.5	21.5	22	22.5	23	24	> 38	> 37	> 33	> 31	> 27	> 26

6 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE6-16	280722	< 4.5	< 5	< 5	< 5.5	< 5.5	< 5.5	14±1	14±1	14±1	15±1	16.5±1.5	18±1.5	> 25	> 22	> 22	> 22	> 22	> 22
DE6-20	280723	< 2.5	< 3	< 3	< 4	< 4.5	< 5.5	19±1	19±1	19±1	19.5±1.5	20±1.5	20±1.5	> 30	> 25	> 22	> 22	> 22	> 22
DE6-25	280724	< 1.5	< 1.5	< 1.5	< 2	< 2.5	< 3.5	24±1	24±1	24±1	24±1	24±1.5	24.5±2	> 30	> 30	> 22	> 22	> 22	> 22

8 WAY TAPS

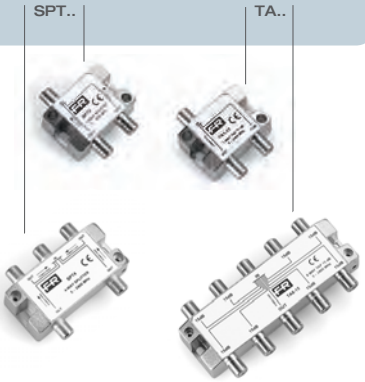
Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE8-16	280725	< 4.5	< 5	< 5	< 5.5	< 5.5	< 5.5	14±1	15±1	15±1	16.5±1.5	18±1.5	19.5±1.5	> 30	> 25	> 25	> 25	> 25	> 25
DE8-20	280726	< 2.5	< 2.5	< 3.5	< 4.5	< 5	< 5.5	19±1	19±1	19±1	19±1	19±1.5	20±1.5	> 30	> 25	> 20	> 20	> 20	> 20
DE8-25	280727	< 1	< 1.5	< 1.5	< 2	< 2.5	< 2.5	23.5±1	23.5±1	23.5±1	24±1	24±1.5	25±3	> 30	> 30	> 25	> 20	> 20	> 20

Splitters and taps

Distribution components with F connectors

5-2400MHz

Splitters and taps with F connectors. Their compact design enables them to be installed in many locations. Their main features are: zinc die cast housing with nickel plate, low insertion loss, high isolation and return loss, earthing screw and wall fixing.



SPLITTERS

Item	Code		Insertion loss dB				Output-output isolation dB			
		Outputs	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
SPT2	289860	2	< 4	< 4	< 4.5	< 5	> 18	> 20	> 20	> 18
SPT3	289861	3	< 6	< 6.5	< 7	< 9	> 18	> 20	> 20	> 18
SPT4	289862	4	< 8	< 8	< 9	< 10	> 18	> 20	> 20	> 18
SPT6	289863	6	< 10	< 10	< 12	< 14	> 18	> 20	> 20	> 18
SPT8	289864	8	< 13	< 13	< 15	< 17	> 18	> 20	> 20	> 18

1 WAY TAPS

Item	Code		Insertion loss dB				Output-output isolation dB			
		Tap loss dB	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
TA1-11	289865	11 ± 1.5	< 2	< 2.5	< 3	< 3.5	> 23	> 23	> 20	> 18
TA1-15	289866	15 ± 1.5	< 1.5	< 2	< 2.5	< 3	> 23	> 23	> 20	> 18
TA1-20	289867	20 ± 1.5	< 1.3	< 1.8	< 2.8	< 3	> 23	> 23	> 20	> 18

2 WAY TAPS

Item	Code		Insertion loss dB				Output-output isolation dB			
		Tap loss dB	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
TA2-11	289868	11 ± 1.5	< 3.5	< 4	< 4.5	< 5	> 23	> 23	> 20	> 18
TA2-15	289869	15 ± 1.5	< 2.2	< 2.5	< 3.5	< 4	> 23	> 23	> 20	> 18
TA2-20	289870	20 ± 1.5	< 2	< 2.5	< 3	< 4	> 23	> 23	> 20	> 18
TA2-25	289871	25 ± 1.5	< 2	< 2.5	< 3	< 4	> 23	> 23	> 20	> 18
TA2-30	289872	30 ± 1.5	< 2	< 2.5	< 3	< 4	> 23	> 23	> 20	> 18

4 WAY TAPS

Item	Code		Insertion loss dB				Output-output isolation dB			
		Tap loss dB	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz
TA4-13	289873	13 ± 1.5	< 4.5	< 5	< 5.5	< 6.5	> 23	> 23	> 20	> 18
TA4-16	289874	16 ± 1.5	< 3	< 4	< 5	< 5.5	> 23	> 23	> 20	> 18
TA4-21	289875	21 ± 1.5	< 2.5	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18
TA4-25	289876	25 ± 1.5	< 2	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18

6 WAY TAPS

Item	Code		Insertion loss dB				Output-output isolation dB			
		Tap loss dB	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz
TA6-16	289877	16 ± 1.5	< 4	< 4	< 5.5	< 8	> 23	> 23	> 20	> 18
TA6-20	289878	20 ± 1.5	< 2.5	< 3	< 4	< 4.5	> 23	> 23	> 20	> 18
TA6-25	289879	25 ± 1.5	< 2	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18

8 WAY TAPS

Item	Code		Insertion loss dB				Output-output isolation dB			
		Tap loss dB	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz
TA8-15	289880	16 ± 1.5	< 4	< 4	< 5.5	< 8	> 23	> 23	> 20	> 18
TA8-20	289881	20 1.5	< 3	< 3.5	< 4.5	< 5	> 23	> 23	> 20	> 18
TA8-25	289882	25 1.5	< 2	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18

Distribution components with F connectors

950-2150MHz

PAS12..

SAT splitters with F connectors

Item	Code	Type	No. of outputs	Insertion loss	Isolation between outputs	Consumption	Dimensions
				dB	dB	mA	mm
PAS1224	PAS1224	Passive	2	-4	18	–	60x50x16
PAS1244	PAS1244	Passive	4	-8	18	–	118x67x17
PAS1244A	PAS1244A	Active	4	0 ± 1	18	60	118x67x17

Splitters and taps

Distribution components with F connectors

5-1000MHz

These splitters and taps have been designed to be used in CATV distribution systems. Their compact design enables them to be installed in many locations. Their main features are: zinc die cast housing with nickel plate, F connectors, high isolation and return loss in accordance with EN 50083-4. earthing screw and wall fixing, high screening efficiency in accordance with EN 50083-2: Class A.

SPL..

TAP..

SPLITTERS

Item	Code	No. of outputs	Insertion loss dB 5-47MHz	Insertion loss dB 47-470MHz	Insertion loss dB 470-1000MHz	Isolation dB min. 5-47MHz	Isolation dB min. 47-470MHz	Isolation dB min. 470-1000MHz	Return loss dB min. 5-47MHz	Return loss dB min. 47-470MHz	Return loss dB min. 470-1000MHz	Dimensions mm
SPL12	280788	2	<3.5	<3.7	<4.0	>20	>25	>24	>22	>20	>17	54x48x19
SPL13	280789	3	<6.3	<6.8	<7.0	>25	>23	>20	>22	>20	>16	75x48x19
SPL13A	280790	3	<7.2(out 2-3) <3.7(out 1)	<7.5(out 2-3) <3.9(out 1)	<8.0(out 2-3) <4.2(out 1)	>28	>25	>22	>22	>20	>16	
SPL14	280791	4	<7.0	<7.5	<8.0	>28	>25	>22	>22	>20	>18	
SPL16	280792	6	<9.6	<10.5	<11.2	>22	>20	>18	>22	>20	>18	120x60x24

1 WAY TAPS

Item	Code	Tap loss dB	Insertion loss dB 5-47MHz	Insertion loss dB 47-470MHz	Insertion loss dB 470-1000MHz	Isolation dB min. 5-47MHz	Isolation dB min. 47-470MHz	Isolation dB min. 470-1000MHz	Return loss dB min. 5-47MHz	Return loss dB min. 47-470MHz	Return loss dB min. 470-1000MHz	Dimensions mm
TAP1106	280760	6	<2.4	<2.6	<3.0	>23	>25	>20	>16	>16	>16	54x48x19
TAP1108	280761	8	<1.8	<1.8	<2.4	>25	>28	>22	>15	>18	>18	
TAP1111	280762	11	<1.0	<1.0	<1.5	>30	>27	>24	>16	>18	>15	
TAP1114	280763	14	<1.0	<1.0	<1.4	>30	>27	>24	>16	>18	>15	
TAP1117	280764	17	<0.8	<0.8	<1.3	>30	>27	>24	>18	>20	>15	
TAP1120	280765	20	<1.0	<1.2	<1.3	>30	>27	>24	>21	>16	>15	
TAP1123	280766	23	<0.8	<1.0	<1.2	>30	>27	>24	>21	>16	>15	

2 WAY TAPS

Item	Code	Tap loss dB	Insertion loss dB 5-47MHz	Insertion loss dB 47-470MHz	Insertion loss dB 470-1000MHz	Isolation dB min. 5-47MHz	Isolation dB min. 47-470MHz	Isolation dB min. 470-1000MHz	Return loss dB min. 5-47MHz	Return loss dB min. 47-470MHz	Return loss dB min. 470-1000MHz	Dimensions mm
TAP1208	280767	8	<3.7	<3.7	<4.0	>28	>24	>20	>16	>18	>15	75x48x19
TAP1211	280768	11	<2.2	<2.5	<3.0	>22	>22	>20	>12	>18	>14	
TAP1214	280769	14	<2.2	<2.5	<3.0	>27	>25	>22	>15	>18	>15	
TAP1217	280770	17	<1.2	<1.5	<2.0	>27	>24	>20	>16	>17	>14	
TAP1220	280771	20	<1.2	<1.5	<2.0	>30	>25	>20	>16	>18	>15	
TAP1223	280772	23	<1.2	<1.5	<2.0	>35	>33	>27	>16	>18	>15	

4 WAY TAPS

Item	Code	Tap loss	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions
		dB	5-47MHz	47-470MHz	470-1000MHz	5-47MHz	47-470MHz	470-1000MHz	5-47MHz	47-470MHz	470-1000MHz	mm
TAP1408	280773	8	-	-	-	>22	>22	>20	>13	>18	>14	87x55x37
TAP1411	280774	11	< 3.7	< 4.0	< 5.0	>22	>24	>20	>13	>18	>14	
TAP1414	280775	14	< 2.4	< 2.8	< 3.5	>22	>24	>20	>13	>17	>14	
TAP1417	280759	17	< 1.9	< 1.9	< 1.9	>22	>24	>20	>13	>18	>14	
TAP1420	280776	20	< 1.1	< 1.2	< 1.6	>22	>20	>20	>13	>18	>14	
TAP1423	280777	23	< 0.8	< 1.0	< 1.4	>24	>20	>20	>13	>18	>14	

6 WAY TAPS

Item	Code	Tap loss	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions
		dB	5-47MHz	47-470MHz	470-1000MHz	5-47MHz	47-470MHz	470-1000MHz	5-47MHz	47-470MHz	470-1000MHz	mm
TAP1611	280778	11	-	-	-	>16	>20	>15	>16	>16	>16	87x55x37
TAP1614	280779	14	< 3.0	< 3.6	< 4.0	>16	>20	>15	>16	>16	>16	
TAP1617	280780	17	< 2.0	< 2.3	< 2.5	>16	>20	>15	>16	>16	>16	
TAP1620	280781	20	< 1.3	< 1.4	< 1.9	>16	>20	>15	>16	>16	>16	
TAP1623	280782	23	< 1.0	< 1.0	< 1.6	>16	>20	>15	>16	>16	>16	

8 WAY TAPS

Item	Code	Tap loss	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions
		dB	5-47MHz	47-470MHz	470-1000MHz	5-47MHz	47-470MHz	470-1000MHz	5-47MHz	47-470MHz	470-1000MHz	mm
TAP1812	280783	12	-	-	-	>22	>22	>20	>15	>18	>14	119x55x37
TAP1814	280784	14	< 3.7	< 4.0	< 5.0	>22	>22	>20	>15	>18	>14	
TAP1817	280785	17	< 2.4	< 2.8	< 3.5	>22	>22	>20	>15	>18	>14	
TAP1820	280786	20	< 1.2	< 1.4	< 1.8	>22	>22	>20	>15	>18	>14	
TAP1823	280787	23	< 0.9	< 1.1	< 1.6	>22	>22	>20	>16	>17	>16	

Splitters and taps

Distribution components with F connectors

5-862MHz

2, 3 and 4 way splitters

PAS12(X)2011

PAS12(X)2011

Item	Code	Insertion loss dB			Isolation between outputs dB			Dimensions	Weight
		5-40MHz	40-470MHz	470-862MHz	5-40MHz	40-470MHz	470-862MHz	mm	g
PAS1222011, 2 Out.	PAS1222011	3.4 ± 0.3	3.4 ± 0.3	3.6 ± 0.4	16	22	20	53x50x25	55
PAS1232011, 3 Out.	PAS1232011	5.3 ± 0.3	5.3 ± 0.3	5.6 ± 0.5	16	20	18	74x50x25	76
PAS1242011, 4 Out.	PAS1242011	7.2 ± 0.3	7.2 ± 0.3	7.5 ± 0.5	18	20	16	74x50x25	8

Distribution components with F connectors

5-862MHz

1, 2, 4, 6 and 8 way taps

PAS2212(X)11 | PAS2222(X)11 | PAS22(X)2811 | PAS2242(X)11

PAS2212(X)11 - 1 WAY TAPS

Item	Code	Tap loss dB			Insertion loss dB			Output-tap isolation dB		
		5-40MHz	40-470MHz	470-862MHz	5-40MHz	40-470MHz	470-862MHz	5-40MHz	40-470MHz	470-862MHz
PAS2212111	PAS2212111	8.5 ± 1	8.5 ± 1	8.5 ± 1	1.6 ± 0.2	1.6 ± 0.2	2 ± 0.3	22	20	18
PAS2212211	PAS2212211	12.5 ± 1	12.5 ± 1	12.5 ± 1	0.7 ± 0.2	0.7 ± 0.2	0.8 ± 0.3	26	26	16
PAS2212311	PAS2212311	16 ± 1	16 ± 1	16 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	28	26	26
PAS2212411	PAS2212411	20 ± 1	20 ± 1	20 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	30	26
PAS2212511	PAS2212511	24 ± 1	24 ± 1	24 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	32	32	28

PAS2222(X)11 - 2 WAY TAPS

Item	Code	Tap loss dB			Insertion loss dB			Output-tap isolation dB		
		5-40MHz	40-470MHz	470-862MHz	5-40MHz	40-470MHz	470-862MHz	5-40MHz	40-470MHz	470-862MHz
PAS2222111	PAS2222111	8.5 ± 1	8.5 ± 1	8.5 ± 1	3.4 ± 0.5	3.6 ± 0.5	3.8 ± 0.5	22	20	16
PAS2222211	PAS2222211	12.5 ± 1	12.5 ± 1	12.5 ± 1.5	1.2 ± 0.3	1.2 ± 0.3	1.2 ± 0.4	26	24	22
PAS2222311	PAS2222311	16 ± 1	16 ± 1	16 ± 1.5	1.2 ± 0.3	1.2 ± 0.3	1.5 ± 0.4	28	24	22
PAS2222411	PAS2222411	20 ± 1	20 ± 1	20 ± 1.5	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	28	26
PAS2222511	PAS2222511	24 ± 1	24 ± 1	24 ± 1.5	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	30	30
PAS2222611	PAS2222611	27 ± 1	27 ± 1	27 ± 1.5	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	30	30

PAS2242(X)11 - 4 WAY TAPS

Item	Code	Tap loss dB		Insertion loss dB	Output-tap isolation dB		
		5-862MHz		5-862MHz	5-40MHz	40-470MHz	470-862MHz
		Tap 1 & 2	Tap 3 & 4				
PAS2242211	PAS2242211	12 ± 1	13 ± 1	4.5 ± 1	26	26	22
PAS2242311	PAS2242311	16 ± 1	17 ± 1	2.5 ± 1	26	26	22
PAS2242411	PAS2242411	20 ± 1	21 ± 1	2.5 ± 1	30	30	26
PAS2242511	PAS2242511	24 ± 1	25 ± 1	2.5 ± 1	30	30	28

PAS22(X)2811 - 4, 6, 8 WAY TAPS

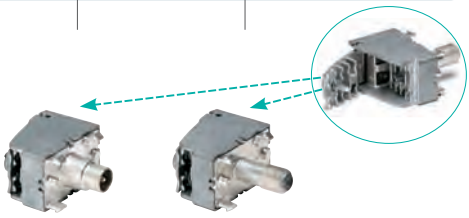
Item	Code		Tap loss dB			Insertion loss dB	Output-tap isolation dB		
			5-40MHz	40-470MHz	470-862MHz	5-862MHz	5-40MHz	40-470MHz	470-862MHz
PAS2242811	PAS2242811	Tap 1	12.5 ± 1	12.5 ± 1	12.5 ± 1	4 ± 1	27	26	24
4 OUTPUTS		Tap 2	13.5 ± 1.5	13.5 ± 1.5	13.5 ± 1.5				
		Tap 3	14.5 ± 1.5	14.5 ± 1.5	14.5 ± 1.5				
		Tap 4	15.5 ± 1.5	15.5 ± 1.5	15.5 ± 1.5				
PAS2262811	PAS2262811	Tap 5	17 ± 1.5	17 ± 1	17 ± 1	6 ± 1	27	26	24
6 OUTPUTS		Tap 6	13.5 ± 1.5	13.5 ± 1.5	13.5 ± 1.5				
PAS2282811	PAS2282811	Tap 7	19 ± 1.5	19 ± 1	19 ± 1	8 ± 1	27	26	24
8 OUTPUTS		Tap 8	19.5 ± 1.5	19.5 ± 1.5	19.5 ± 1.5				

Outlets - Connectors

5-2400MHz outlets

SPI.. and SPF.. Series

SPI.. SPF..



Single 5-2400MHz outlets. High screening efficiency to standard EN 50083-4 Class A.
The outlet is designed with an innovative system to connect to coaxial cable. It enables the user to connect to a cable with a diameter between 5 and 7mm. Terminal outlets enable the current to pass through the input and user output. Pass-through outlets enable the current to pass through input and output and blocks it on user output.

Item	Code	Insertion loss dB				Distribution loss dB				Outlet type	Connector
		Return path	TV	SAT		Return path	TV	SAT			
		5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz		
SPI00(1)	220711	—	—	—	—	< 0.5	< 0.5	< 0.8	< 0.8	Terminal	IEC male
SPI05	220712	< 5	< 5	< 7	< 8	< 5	< 5	< 7	< 8	Pass-through	
SPI10	220713	< 2.5	< 2.5	< 3	< 3.2	10.5	10	10.5	11		
SPI14	220714	< 1.5	< 1.2	< 2.2	< 2.5	15	14.5	14.5	15		
SPI18	220715	< 1.5	< 1.2	< 2.2	< 2.5	18.5	18	18	18.5		
SPI22	220716	< 1.5	< 1.2	< 2.2	< 2.5	22.5	22	22	22.5		

Item	Code	Insertion loss dB				Distribution loss dB				Outlet type	Connector
		Return path	TV	SAT		Return path	TV	SAT			
		5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz		
SPF00(1)	220721	—	—	—	—	< 0.5	< 0.5	< 0.8	< 0.8	Terminal	F female
SPF05	220722	< 5	< 5	< 7	< 8	< 5	< 5	< 7	< 8	Pass-through	
SPF10	220723	< 2.5	< 2.5	< 3	< 3.2	10.5	10	10.5	11		
SPF14	220724	< 1.5	< 1.2	< 2.2	< 2.5	15	14.5	14.5	15		
SPF18	220725	< 1.5	< 1.2	< 2.2	< 2.5	18.5	18	18	18.5		
SPF22	220726	< 1.5	< 1.2	< 2.2	< 2.5	22.5	22	22	22.5		

(1) DC passes between the input and output connector

Item	Code	Description
PL1UK	280794	Cover for SPI.. and SPF.. - For UK boxes

Wall outlets TV + SAT + FM

Wall outlets with TV + SAT + FM outputs.

PAS0032D

PAS0042D

Item	Code	Output	Connector type	Bandwidth MHz	Insertion loss dB	Outlet type
PAS0032D*	PAS0032D	FM+DAB TV SAT *	IEC female IEC male F female	87-240 5-68/260-862 950 - 2300	1.5 1.5 2	Terminal
PAS0021D	PAS0021D	FM+DAB TV	IEC female IEC male	87-240 5-68/260-862	≤2	Terminal
PAS0025D	PAS0025D	FM+DAB TV*	IEC female IEC male	87-240 5-68/260-862	≤2	Terminal
PAS0042D	280793	TV R SAT1* SAT2*	IEC female IEC male F female F female	5-68/120-862 88-108 950-2150 950-2150	2.5 2.5 2 3	Terminal

* D.C. pass: 500mA max

Connectors

I.E.C. coaxial connectors

SP1

SP5

PR1

PR5

PR11

MALE CONNECTORS

Item	Code	Type	Copper plated		ø mm	Packaging
			Screw	Shielded	9.5	Pcs
SP1	290351	Cable connector - straight	x		x	100
SP5	290354	Cable connector - straight		x	x	100

FEMALE CONNECTORS

Item	Code	Type	Copper plated		ø mm	Packaging
			Screw	Shielded	9.5	Pcs
PR1	290451	Cable connector - straight	x		x	100
PR5	290454	Cable connector - with screw		x	x	50
PR11	290365	For wall outlets - L shaped		x	x	50

Connectors - Accessories

Connectors

F connectors

CF..

CFR..

CAP

CCF..

PAS3214B

F MALE TWIST ON CONNECTORS

Item	Code	Description	Cables Ø mm	Packaging Pcs
CF50	280340	Quick F male	4.9-5.0	50
CF60	280341		5.9-6.0	
CF66	280342		6.5-6.6	
CF70	280346		6.9-7.0	

F MALE QUICK CONNECTORS

Item	Code	Description	Cables Ø mm	Packaging Pcs
CFR50	280343	Plug in F male	4.9-5.0	50
CFR60	280344		5.9-6.0	
CFR66	280345		6.5-6.6	
CAP	280347	Quick F male	4.0-7.0	

CRIMP F CONNECTORS

Item	Code	Description	Cables Ø mm	Packaging Pcs
CCF66	289768	Plug in F male	6.6-6.8	100
CCF102	289769		10.2	20

COMPRESSION F CONNECTORS

Item	Code	Description	Cables	Packaging Pcs
PAS3212B	PAS3212B	Universal - for indoor/outdoor applications	PAS4036 - PAS4016 PAS4136 - PAS4116	50
PAS3214B	PAS3214B		PAS4009 - PAS4109 - PAS4110	25
PAS3664D	PAS3664D	Tool for PAS3214B	–	1

Accessories

75 Ohm loads - Adaptors - Cables

CA75F

T75IF

CR75I

TF90

GCF

GC1

PAUTV

PAS3213001

PAS61..

75 Ohm LOADS

Item	Code	Description	Packaging Pcs
CA75F	289085	Single load - F male connector	100
T75IF	290002	Isolated load - F male connector	20
CR75I	289776	Coaxial for TV	20

ADAPTORS

Item	Code	Description	Packaging Pcs
TF90	289543	Right angle F male to F female	50
GCF	289544	F female - F female	50
GC1	290030	Cable connector	100
PAUTV	280373	Dual F female - F female - F female grounding back	250
PAS3213001	PAS3213001	F female - F female with DC block	20
PAS6106	289770	5-2400MHz attenuator - Att. 6dB - DC pass	5

CABLES

New

Item	Code	Description	Packaging m
PAS4016104	287154	6.5mm cable available in black, brown and white	100

General features

External Ø	Comp.	PVC	Attenuation	dB	Return loss	dB
	Ø mm	6.55	5MHz	1.6	5-30MHz	23
Inner cond.	Comp.	CU	50MHz	4.6	30-470MHz	23
	Ø mm	1±0.02	100MHz	6.5	470-862MHz	20
Dielectric	Comp.	PEE	200MHz	9.5	862-2150MHz	18
	Ø mm	4.25	460MHz	15	Screening atten.	dB
Shield		CU	8600MHz	19.5	30-470MHz	75
DC	Inner Ohm/Km	26	1000MHz	21.5	470-862MHz	75
	Outer Ohm/Km	15	1750MHz	29	862-2150MHz	65
Typical impedance	Ohm	75	2150MHz	32.5		

PVC: Polyvinyl chloride, CU: Copper, PEE: Phisical foam polyethylene

ACCESSORIES

Item	Code	Description	Packaging Pcs
PRT1	210095	Earth terminal board - For earth connection of 6 coaxial cables in a TV distribution network. Best to be installed closed to the amplifier	25
ECP-UK	289455	UK plug adaptor	1

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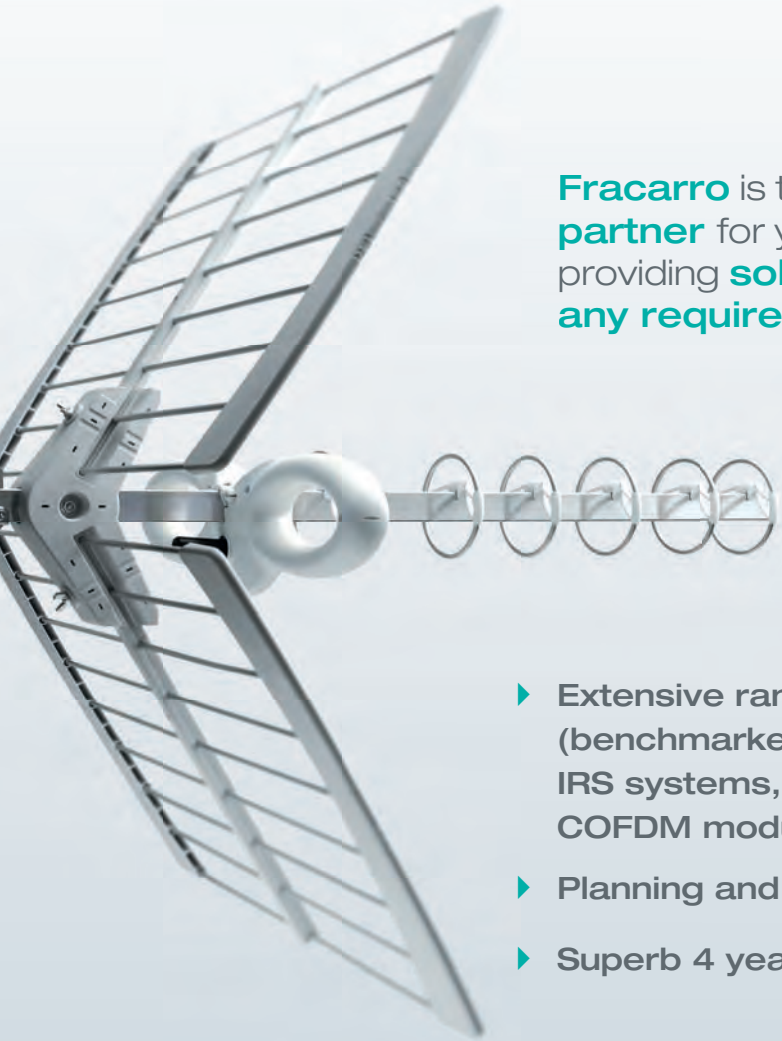

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